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ABSTRACT

The purpose of this study, conducted in 1976, was to update and extend the 1974 survey entitled "Student Use of Open University Broadcasting" or the Bates Report. It was also intended to assist broadcast policy and planning decisions and to furnish individual course teams with summative evaluation data on student use of broadcasting. The report is divided into three major sections: (1) design of the survey including the sample, the questionnaire, and analysis and interpretation; (2) survey results including availability of audiovisual equipment, use of open forum broadcasts, viewing and listening on individual courses, and student views on the need for program repeats; and (3) factors affecting the use of broadcasting. Appendices are not included. (STS)

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BROADCASTING

AND THE OPEN UNIVERSITY STUDENT

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CONTENTS

1.	BACKGROUND TO THE STUDY	1
	Summary	2
2.	DESIGN OF THE SURVEY	
	The Sample	4
	The Questionnaire: Design and Student Completion Errors	5
	Mailing	8
	Response Rate	8
	Analysis and Interpretation	8
	Summary	11
3.	THE RESULTS: CURRENT USE OF BROADCASTING	
	Availability of Audio-Visual Equipment	12
	Use of Open Forum Broadcasts	15
	Viewing and Listening on Individual Courses	22
	Broadcasting in a Course Context	34
	The Need for Repeats: Student Views	51
4.	FACTORS AFFECTING USE OF BROADCASTING	
	Single Transmissions	59
	Particular Transmission Combinations	61
	Other Programme-related Factors	66
	Drop-Out and Examination Result	67
	Other Student-related Factors	76
5.	SUMMARY AND CONCLUSIONS	79
	REFERENCES	90

APPENDICES (BOUND SEPARATELY)

I.	Design of the Sample	91
II.	1976 Sample Groupings	96
III.	The Questionnaire	97
IV.	Transmission Times in 1976	107
V.	Viewing Figures for each Course	108
VI.	Listening Figures for each Course	114
VII.	All Students' Ratings of Course Components	120
VIII.	User Students' Ratings of Course Components	128
IX.	Need for Television and Radio Repeats	136
X.	Viewing and Listening Figures for Each Transmission Slot	142
XI.	Reasons for Missing Television and Radio Programmes	158
XII.	Viewing and Listening Figures for Drop-Out and Non Drop-Out Students	160
XIII.	Listening and Viewing Figures by time of drop-out	166
XIV.	Student Ratings of Television and Radio by Course Result	167
XV.	Students' Letters about Broadcasting	173

1. BACKGROUND TO THE STUDY

Readers of this report may well find it difficult to believe that it is now two years since the blue-covered "Student Use of Open University Broadcasting" - which quickly and more commonly became known as the "Bates Report" - first went into circulation. Indeed, it is difficult enough for the Audio-Visual Media Research Group to believe: such was the interest provoked by that report, and such is the inexorability of the University's consultative machinery that at its June 1977 meeting the Broadcast Sub-Committee held its final discussion of the Bates Report along with its first discussion of this one.

The data on which that first study was based were collected at the end of 1974. By the end of 1976, when this present survey was carried out, the problems faced by the University in the broadcasting area had not decreased. 1975 and 1976 saw the first presentation of 29 new and 3 remade undergraduate courses, involving the transmission of 418 new television and 459 new radio programmes: a total of 1305 separate television and 1355 radio programmes was now being broadcast to the 55,600 students registered for the University's 98 undergraduate and post-experience courses. The transmission pattern had increased in complexity: television programmes were now broadcast on both BBC networks, beginning at 06.40 on BBC 2 and at 07.05 on BBC 1 on weekdays and at 07.40 on BBC 2 at weekends, while evening transmissions began at 17.00 on BBC 2; radio broadcasts began at 06.00 and at 17.45 on Radio 3 VHF on weekdays, while at weekends transmissions were between 06.00 and 08.00 on Radio 3 VHF and between 09.05 and 17.00 on Radio 4 VHF; in the north of Scotland and in parts of Wales there were no Saturday transmissions on Radio 4 VHF - instead, radio programmes for the 30 courses affected were transmitted to students in these areas between midnight and 1 a.m. throughout the week on Radio 3 VHF; in addition, all students registered for a small number of Arts courses had repeat broadcasts between midnight and 1 a.m. on Sunday nights/Monday mornings on Radio 3 VHF. (A table giving full transmission details for 1976 is given in Appendix IV). The University was now using 35½ hours of television transmission per week (8 hours per week more than in 1974 and 5 hours more than the original agreement with the BBC provided for) and 26 hours of radio transmission time weekly (3 hours more than in 1974). At the same time, one course (M202) had lost the repeat broadcasts of its television programmes, while a total of 23 courses had lost their radio repeats.

The University's Broadcast Sub-Committee, therefore, faced the same problems it had had to confront since 1974: an increasing number of courses and programmes and a constant amount of transmission time. (Although the radio transmission time used is still 4 hours short of the 30 hours per week originally negotiated, the additional times available for Open University transmissions - before 06.00, weekday afternoons and after 1 a.m. - are considered to be altogether too inconvenient or inappropriate). Already by 1977 the number of courses without radio repeats has increased to 43, while 8 courses now have no television repeats. In 1978 the numbers will be about 52 and about 20 respectively. The question was which courses should lose their repeats? For which existing courses did students make most use of, and place most value on the broadcasts? In addition, what could be said about the effect of present transmission times on viewing and listening? What had been the effect of "staggering" repeats on M100? How did late-night and early morning transmissions affect the potential student audience? Did the loss of repeat transmissions have a discernible effect?

Other developments in the broadcasting area since 1974 included the increase in the proportion of television programmes being transmitted in colour (since 1975 no new programmes have been made in black and white) and the desire of many new course teams, particularly in the Science area, to maximise the advantages offered by colour production (for instance, the remade Science Foundation course intends to devise its television programmes on the assumption that the majority of students will have access to a colour set). A growing number of course teams had adopted a policy of assessing the broadcast component in courses, making it almost essential for students to watch and/or listen to the programmes if they were not to be disadvantaged. The use of various forms of radio-vision was increasingly being substituted for "straight" radio programming. Each of these developments raised its own questions: how many of our students did, in fact, have access to colour television sets? How had assessment policy affected viewing and listening of, as well as attitudes to programmes? Had the introduction of radio-vision improved the rather disappointing student use of radio established by our earlier survey?

A further - and most important - trend was, along with the increase in the number of courses a concomitant decrease in the average number of students registered for any one course. Already by 1976, a quarter of the University's courses had populations of less than 300, while half had less than 500 students. The implications of this trend for broadcasting policy have been discussed elsewhere[1]; however, in terms of this study it raised questions concerning the availability to students of equipment such as record-players, tape-recorders, telephones, slide-viewers, which might support the provision of audio-visual material other than broadcast programmes in certain cases.

A final set of questions concerned the differences between individuals and groups of students in their use of Open University - including Open Forum - broadcasting. For instance, was there any difference between post-experience and under-graduate students in viewing and listening patterns or in attitudes to the programmes? How did other factors such as experience of Open University study, occupation, or examination performance affect the general picture?

It had to be borne in mind that the survey carried out in 1974 had addressed and provided substantial information on very many of these questions. In the present study, therefore, one was concerned neither with duplicating nor, for the most part, with replicating what had already been done. The primary intention was to up-date and extend the information already available. At the same time, this intention posed its own limitations on data collection in 1976 (a point to which I shall return in the following section), since - at least for the policy-making and planning purposes of the Broadcast Sub-Committee, and also, ideally, for the evaluative judgements of individual course teams - there had to be a reliable element of comparability between the two sets of data.

Summary

The study set out to up-date and extend the survey "Student Use of Open University Broadcasting" carried out in 1974. It aimed to assist policy and planning decisions in the broadcasting area (through the Broadcast Sub-Committee) and to furnish individual course teams with summative evaluation data on student use of broadcasting. To meet these aims, the survey attempted to answer the following questions:

1. What proportion of students have access to colour television, VHF radio, audio and video tape-recorders, record-players, telephones and 35mm. slide-viewers?

2. What proportion watch or listen to Open Forum programmes? Which particular Open Forum television programmes are most watched? Why do students not watch, and what are their attitudes to Open Forum radio?

3. What proportion view and listen to the programmes on specific courses? Why do they not view or listen?

4. What differences are there between viewing and listening figures for different transmission times?

5. What is the effect of the loss of repeats on individual course viewing and listening figures?

6. How do students rate the necessity for repeats of television and radio programmes on individual courses? What reasons lie behind their ratings?

7. What is the effect of the "staggered" transmission pattern on M100?

8. Have there been any significant overall changes in student use of broadcasting since 1974?

9. How do specific course team policies, such as the use of radio-vision and the separate assessment of broadcasting, affect student behaviour?

10. How do students rate broadcasting in relation to other course components?

11. Are there significant differences between undergraduate and post-experience students in their use of broadcasting?

12. Are there any significant variables distinguishing between students in either the availability to them of audio-visual equipment or the use they make of Open University broadcasting? The following variables in particular were examined:

    occupation, region, extent of experience in the Open University, access to Open University study centres, end of course examination performance.

2. DESIGN OF THE SURVEY

The Sample

It should be clear from the preceding section that the survey aimed to provide data of two different sorts. Firstly, there was the student-based information (which was to come from questions on availability of equipment, Open Forum viewing and listening, and so on). These data had to be representative of all students registered in the Open University. Secondly, there was the course-related information (to come from questions on viewing and listening on specific courses, ratings of course components, and so on). These data had to be representative of all students registered for the courses in question.

I have already indicated that it was never intended that the study should replicate the 1974 survey. The primary purpose was to provide new information, and this meant concentrating on new courses, on courses which, although not new, had not been included in the earlier study, and on courses whose transmission had been affected by the loss or staggering of repeats since 1974. The total number of courses which came into one or more of these categories in 1976 was 60: to these was added S100, which was being intensively evaluated prior to its remake, making a final total of 61 courses. In the case of the 10 courses which were available to both undergraduate and post-experience students, two separate samples were drawn for each. (A complete list of the 61 courses, together with numbers of students sampled and response rates, is provided in Appendix I). In order to provide reliable student-based information, however, samples had to be drawn from all of the remaining 38 courses then in presentation (i.e. these students were asked to respond only to questions on availability of equipment, Open Forum etc.; students on the initial 61 courses responded to these questions as well as to questions related to the specific courses for which they were sampled).

In all sample-based surveys there is a need to strike a balance between maximum data reliability and manageable absolute numbers in the sampled population. Our initial intention was to achieve a maximum sampling error of ± 5% at the 95% level of certainty. This means that, because we are dealing with a sample of the population and not all of it, we could have been sure that if 60% of the respondents on a course had said that they had a colour television set, we could have been 95% sure that between 55% and 65% of all students on that course had a colour set. However, following some trial runs by the Data Processing division, it was clear that we would not be able to cope with the total number of students - over 21,600 - which such an error acceptability would require. By slightly increasing the maximum acceptable sampling error to ± 6%, we were able to reduce the absolute numbers in our sample to 16,296 students. This represented 29% of all finally registered students in 1976. (Note that ± 6% was the maximum error: in fact, in most cases the actual sampling error was considerably lower, as I shall show later.)

This total figure comprised 14,184 undergraduate (28% of all finally registered undergraduates) and 2,112 post-experience students (45% of all finally registered post-experience students.) Since all post-experience courses were included in the survey, the sampled post-experience students all provided information for both the student-based and the course-based sides of the study. However, our 14,184 undergraduates included 3,331 who had been sampled only for the student-based side, as well as 10,853 sampled to

provide both types of data.

As in the 1974 survey, students were sampled for up to four courses (i.e. they were asked to provide information on their use of broadcasting for up to four courses). In fact, only 140 students altogether were sampled for more than two courses. However, even though a student might only have been sampled for one course, s/he might be registered for more than one: such students clearly had a higher probability of being selected for the survey at all, as did students on low population courses (indeed, of our 61 selected courses, those with populations below 180 were censused, not sampled at all). This meant that for those parts of the study where data from different course samples was added together (as in data representing all students or all student-courses in the study) it was necessary to weight the data for each student according to his or her probability of selection. Details of this procedure and of the sample design as a whole are provided by Judith Calder in Appendix I .

A final problem in the selection of the sample was the need to minimise overlap with the student sample being drawn for another major study which was to be carried out at the same time as our broadcast survey. This was a survey of students on courses with a "project" component. Following a meeting in mid-1976 between members of the Project Study Group, the Audio-Visual Media Research Group and Data Processing, a means was devised of avoiding overlap on the courses with medium or large populations. However, there remained a small number of low population courses which had to be censused for both studies, and a handful of students registered for more than one course who could be sampled for one of their registered courses in the broadcast study and for another course in the project study. All students sampled for both studies - there were just 618 - were listed separately by computer. These students were all sent a letter explaining and apologising for the need for overlap and they received both broadcast and project questionnaires in one package.

The sample was drawn on 11th November, 1976 using all continuing students on file on 23rd February, and all students registering for the first time in 1976 on file on 5th May (a week after final registration dates on each case). A diagrammatic break-down of the total student sample drawn for the survey is given in Appendix II.

The Questionnaire: Design and Student Completion Errors

I have already described how a student might be sampled to provide student-based information or to provide, in addition, information related to one, two, three or four courses. The sample included both undergraduate and post-experience students. Of the 61 courses in the course-based sample, some had radio repeats and some did not; most had television repeats but one (M202) did not; one course (A402) had no television programmes; the number of television and radio programmes and the transmission times for those programmes varied from course to course. Given the size of the sample, however, it was important to devise a single basic questionnaire which could be completed by all sampled students. At the same time, to maximise reliability and validity of the data a certain amount of clerical effort was invested in, so that - as far as possible - each questionnaire was "tailor-made" for the individual student to whom it was mailed. Many of these problems of course, had been faced and resolved in the design of the 1974 survey; at the same time, we had the benefit of experience gained from the earlier study which allowed us to circumvent one or two problems which had emerged at that time.

In order to allow comparability of the 1974 and the 1976 data, it was important that as far as possible, the wording of questions asked in the earlier study should remain unchanged. This did not mean, of course, that there was no scope for the inclusion of additional questions, where these were feasible and necessary, nor that wording found to be ambiguous in 1974 could not be altered. Following a meeting with the Deans of Faculties, when questionnaire wording and analysis were discussed, a draft questionnaire was drawn up and circulated to the Deans, members of the Broadcast Sub-Committee and of the Open Forum Policy Group, other members of the Audio-Visual Media Research Group, the Survey Research Department and the Institutional Research and Development Committee, who had funded the study. Comments were received and a final draft discussed by the A/V Media Research Group and the Survey Research Department. A copy of the questionnaire used is included in Appendix III.

A major change to the student-based section of the questionnaire was the expansion of the questions on Open Forum viewing and listening. It was possible to list by title all thirteen Open Forum television programmes, so as to establish more accurately than could be done in 1974 both how many and which programmes were seen. It was not, though, possible to do this for the forty or so radio programmes transmitted in the Open Forum slot in 1976. However, students were asked to select pre-coded answers to a question asking why they had missed the television programmes, and - because the Open Forum Policy Group were dubious of the value of asking students to recall just how many of the programmes they had heard over a ten-month period - to code the self-perceived regularity of their Open Forum radio listening (students were also asked how many programmes they had heard).

Several new questions were included in the course-based section, asking students to rate the necessity for repeats of radio and television programmes, together with reasons. Much discussion of the 1974 data had centred on the question which had asked students to rate broadcasts, as well as other course components, in terms of their helpfulness in assisting learning. Some course team members had insisted that in many cases the broadcasts - particularly radio - had not been intended to directly assist learning in the sense of providing information for use in assignments or examinations; rather, they had often been intended to arouse, maintain or increase students' interest in the course. Consequently, a question asking students to rate the course components in these terms (as well as the "helpfulness" question) was included in the 1976 survey.

One of the biggest problems in the 1974 study - and one which persisted in 1976 - arose because of the need to ask students to recall, over a ten-month period, not only how many programmes they had seen and heard for particular courses, but of these how many had been seen and heard at particular transmission times - first transmission only, second transmission only, or both transmissions. Because students who had seen or heard both transmissions of a programme also at times appeared to include this programme in each of the "first transmission only" and the "second transmission only" categories, Tony Bates concluded that individual transmission slot figures were overestimated by about 5% for television and about 10% for radio, although the overall viewing and listening figures for each course were not affected by this particular error.[2] In an attempt to avoid this error in the 1976 study, several steps were taken. Firstly, before the questionnaires were mailed, clerks entered manually the number of television and radio programmes transmitted for the

particular course sampled. Secondly, both the order and the wording of the questions on numbers of programmes seen and heard were slightly altered. It was stressed that we were interested in the number of different programmes seen and heard, so that programmes seen or heard twice (or more) should be counted as one programme. In fact, this combination of measures seems to have been quite successful, since in the 1976 study although there is still some overestimation of programmes seen and heard at particular transmission times, the average overestimate is now only about 2% for television and 3% for radio. The average error, however, is not spread evenly across all courses and, as in 1974, a small number of courses have large discrepancies. For this reason, I have followed the procedure used in 1974 of adjusting the data by splitting the excess equally between each of the single transmission times. The effect of this adjustment is shown in Table 1:

TABLE 1. Effect of adjusting viewing figures for individual transmission slots: M100 - Non Drop-Outs

	Mean % of programmes viewed:	
	Raw data %	Adjusted data %
Programmes viewed at least once	68	68
1st transmission only	38	37
2nd transmission only	13	12
Both transmissions	16	16
Recording only	3	3
Total	70	68
Difference (70-68)	2	-

Clearly, in "average" cases like M100 the adjustment is almost negligible and even in the most extreme cases never affects the figures for individual transmission slots by more than 5%. Throughout this report, therefore, adjusted figures are used when discussing viewing and listening at particular transmission times. However, in Appendices V and VI both raw and adjusted data for each course are given.

While the overall viewing and listening figures are not affected by this particular error, they too are likely to be subject to a small error because of their dependence on the accuracy of students' memory. However, since the actual numbers of television and radio programmes for the course or courses for which a student had been sampled were written into the questionnaire before mailing, and since students were advised to check through the list of programme titles in the Broadcast Schedule or Course Guide, this error is likely to be very small indeed.

A further, more specific, error which must be mentioned concerns the listening figures for one particular course, S266. Because of a clerical error, the number of radio programmes entered onto the questionnaires sent to S266 students was 16 and not -, as it should have been - 6. It was clear that some students - though not all - consequently overestimated the number of radio programmes they had heard. Since it was impossible to tell how many students had used 16, and how many had used 6 as a base from which to calculate the number of programmes they had heard, listening figures for S266 have been excluded from this report. However, other radio-related data, which would have been unaffected by this clerical error - for instance, ratings of the programmes - have been included.

Mailing

As well as entering the numbers of television and radio programmes, clerks copied the student serial number and the course code/s for the course or courses for which the student had been sampled onto each questionnaire before mailing.

All 16,296 questionnaires were mailed, together with a covering letter signed by the Pro Vice-Chancellor (Planning) and a pre-paid envelope for reply, between 15th November and 10th December 1976. The mailing was timed so that questionnaires would begin to arrive with students in the week following the last of the end-of-course examinations and so that all students in the sample would have received their questionnaires well in advance of the Christmas rush. Two reminder letters were sent to students who had not returned completed questionnaires within two weeks and four weeks of having received them. All reminder letters had been mailed by 14th January, 1977.

Response Rate

The cut-off date for the survey was set at 31st January. By that time, 13,541 usable questionnaires had been returned, giving an overall response rate of 83%. As we had expected, there was considerable difference in response rate between undergraduates (85%) and post-experience students (72%). In all cases, the data obtained from undergraduates and post-experience students has been tabulated separately.

In the course-based sample, response rates varied from course to course. Among the undergraduate courses, the highest response rate was 90% (on A302 and A305), and the lowest was 66% (on D331). However, D331 was an extreme case, being the only undergraduate course to drop below a 70% response rate: indeed, only 4 courses dropped below 75%. Of the post-experience courses, the highest response rate was 82% (post-experience registrations on T241), while the lowest was 53% (P881). Here again, P881 was an extreme case, being the only post-experience course with a response rate lower than 68%. In the case of both undergraduate and post-experience courses there was a clear positive relationship between low response rate and high drop-out rate. Details of all response rates are given in Appendix I.

The response rate can be regarded as highly satisfactory, given that - as in 1974 - in the few cases of below average response, the courses had either been censused or had involved proportionately high samples. I have calculated sample errors for a range of questions across various courses. (The sample error varies according to both the number of students answering any particular question and the distribution of responses to that question: it would be an impossible task to calculate the error for each response across all courses.) In the very worst case (slide-viewer ownership on P881) the error was $\pm$ 14% at the 95% level of certainty. However, on no other piece of information, even on P881, did the error exceed $\pm$ 9%. Because in many cases the response rate was higher than the 80% which had been anticipated, the average sample error is about $\pm$ 3% and $\pm$ 4% for any single item of data from undergraduate and post-experience students respectively. In the case of courses where a census was used there is, of course, no sample error.

Analysis and Interpretation

Punching and computer programming facilities were provided by Gallup Polls Ltd., who turned round what was by any standards an enormous amount of data in time to meet the Broadcast Sub-Committee's deadline for the allocation of

transmission times at the end of April.

The scale of the operation was indeed daunting. Of the 61 separate courses included in the survey, 10 were available to both undergraduates and post-experience students, and separate tables were needed for each of these two groups: this meant that there were, in effect, 71 different sets of course-based tables to be produced. Since eleven tables were needed for each course, 781 separate course-based tables had to be produced. However, since the 1974 survey had shown that overall viewing and listening figures were affected by student drop-out on courses, it was decided to separate all responses of drop-outs and non-drop-outs. Consequently, 22 different tables were actually produced for each course. The course-related data alone, then, involved the production of 1,562 separate tables. In addition, a further 20 student-based and 20 "cross-course" tables were produced. All course-based tables had been received by the end of March, though problems with the weighting procedure for the student-based and cross-course data delayed production of these tables until the middle of May.

Course-based tables for each course included in the sample provide information on

(a) viewing and listening figures.
(b) reasons for not watching and listening
(c) estimates of necessity for television and radio repeats.
(d) reasons television and radio programmes need or need not be repeated.
(e) comparative helpfulness of various course components.
(f) comparative interest of same components.
(g) access to audio-visual equipment.

For each course, the data for drop-outs and non-drop-outs is tabulated separately. In the non-drop-out tables, viewing and listening figures and helpfulness and interest ratings are broken down by end of course examination result.

Student-based tables estimated for all 51,156 undergraduate and all 4,549 post-experience students registered for study in the University in 1976, provide information on

(a) access to audio-visual equipment.
(b) Open Forum viewing and listening figures.
(c) reasons for missing Open Forum programmes.

Data for undergraduates and post-experience students are tabulated separately. Where appropriate, the data are broken down by year of intake, region, occupation, and access to study centre.

Cross-course (or student-course) based tables, estimated for all 38,737 undergraduate student-courses in the course-based sample and all 4,771 post-experience student-courses in the University, provide information on

(a) viewing and listening figures.
(b) reasons for not watching and listening.
(c) necessity of television and radio repeats.
(d) reasons repeats necessary or not.
(e) comparative helpfulness of course components.
(f) comparative interest of course components.

Data for undergraduate and post-experience students are tabulated separately. Where appropriate, the data are broken down by the variables used in the student-based analysis, and in addition by faculty, course level, number of courses enrolled for in 1976, access to audio and video

tape recorders, regularity of programme transmission, drop-out and time of drop-out, and end-of-course examination result. It is important to note that the undergraduate data in these cross-course tables are not representative of all Open University undergraduate student-courses; but only of those included in the course-related sample. In other words, one cannot for instance draw absolute or overall comparisons between the Faculties in terms of viewing and listening figures on the basis of these data alone, since the courses were not selected as being "representative" of faculty output. Consequently, cross-faculty comparisons can be made only in relation to the particular 57 undergraduate courses included in the survey. At the same time, it is possible to compare the 1976 student-course information with the 1974 data (which was representative of all student-courses at that time) in order to establish how more recent student-course data fit into the general cross-faculty picture established at that time. The post-experience student-course data are not subject to any such limitation, since all 14 courses on offer to post-experience students in 1976 were included in the survey.

When it comes to the question of data interpretation, researchers tend to align themselves with one of two positions. Some incline to the view that the data speak for themselves, and should be presented in their "purity" as sets of tables, graphs, histograms or whatever so that individuals may form their own conclusions and evaluative judgements. My own view is that data are never "pure", having been obtained as a result of particular question formulations and analyses, and that they only have something to "say" within specific contexts. I have already indicated the sorts of broad questions which gave rise to the collection of the data reported here, and it is within that context that I have attempted to interpret them. No doubt many readers will disagree with aspects of this interpretation, just as some may disagree in principle with the provision of commentary or interpretation of any sort. Disagreement, however, I would argue is likely to be more thought-provoking and, therefore, fruitful than the bland good intentions with which one often "files" those awesome pages of tabulations which at times thud onto one's desk - to be scanned and made sense of when one has a free "moment". Accordingly, I have in this report extracted what is in my view the most important information from the 1,600 tables produced for the study and have commented on and attempted to explain that information in relation to the questions raised earlier. However, a complete set of tables is available for consultation in the University library so that my selection and interpretation of data can be checked. In addition, a copy of all relevant course-based tables has been sent to the maintenance Course Team Chairmen of each of the 61 courses included in the survey.

Since readers may want to compare the 1976 information with that collected in 1974, I have as far as possible retained the format and mode of data presentation used in the Bates report. For the same reason I have, in general, used the same data bases as were used in the earlier study. Thus, for example, although viewing and listening figures were tabulated separately for drop-outs and non-drop-outs in the 1976 survey (and although both sets of data are provided in the Appendices to the report), in the main commentary when viewing and listening figures are given these refer to all students, since this was the based used for viewing and listening in 1974. Of course, important differences between drop-outs and non-drop-outs affecting

overall figures are referred to in the main report.

Finally, when I refer to "students" in the report, I include both undergraduates and post-experience students except in cases where notable differences have emerged between these groups: any such differences are commented on.

Summary

A total of 61 courses was covered by the study, including all courses new since 1974, all post-experience courses and all courses whose transmission patterns had been affected by the loss or staggering of repeats. The total sample size was 16,296 or 29% of all students finally registered in 1976. The usable questionnaires numbered 13,541 giving an overall response rate of 83%. The average sampling error on any single piece of information is estimated at ± 3% and ± 4% for undergraduates and post-experience students respectively.

Over 1,600 tables were produced for the study providing information on student use of broadcasting on 61 courses, and on the availability of audio-visual equipment to all Open University students as well as on their use of Open Forum broadcasting. Although small differences should be ignored, the statistics are extremely reliable and provide an accurate picture of current student use of broadcasting.

3. THE RESULTS: CURRENT USE OF BROADCASTING

Availability of Audio-Visual Equipment

Since 1974 there has been no change in the overall proportions of students with access to BBC 2 television sets (97%) and VHF radios (94%). However, students who did not have VHF radios in 1974 seem to have purchased them since then, the overall percentage with sets remaining fairly constant because of new University entrants who do not have sets.

TABLE 2. Students' access to VHF radio sets

	1974 Data		1976 Data	
Year of intake	Access	No access	Access	No access
	%	%	%	%
1971	96	4	96	4
1972	94	6	95	5
1973	93	7	95	5
1974	91	9	94	6
1975	-	-	94	6
1976	-	-	92	8
All students	93	7	94	6
	N = 10,537		N = 13,541	

Although the trend is small - inevitably so, given that the initial proportion without sets is small - it seems clear that sizeable numbers of students who, on entry, do not have sets appropriate for receiving Open University radio programmes purchase them within a couple of years of initial registration.

A second notable trend - this time in television set ownership - is the increase in the proportion of students with colour sets. This has increased from 39% in 1974 to 54% in 1976 - just about the national average, according to figures provided by the British Radio Equipment Manufacturers' Association (BREMA). There was some variation between different courses in the number of registered students with colour television sets. For instance, proportionately more students on technology courses had colour (the average was 60% across all technology courses in the sample, while 70% on T351 "Materials Under Stress" and 68% on T321 "Telecommunications Systems" had colour sets). Students taking science courses, on the other hand, had only average colour ownership (55% across all science courses in the sample), with 51% of the S100 students having colour sets. By 1980 (the first year of presentation of S101), there is indeed likely to be a majority of students with easy access to colour television: assuming that our students keep step with increases projected (by BREMA) for the population as a whole, something like 80%-90% are likely to have colour sets in 1981. However, this still leaves a sizeable minority without colour, who would have to make special arrangements to see at least those programmes which depended on colour for total understanding. The monochrome sets now in study centres will gradually be replaced with colour monitors, and this should do something to ease the problem. On the other hand, our data showed that students who already had access to colour sets were rather more likely than average to use the study centres. (57% of those who could attend weekly

had colour while only 49% who could "never" attend had colour sets), so this will be by no means a total solution.

Turning now to the availability of tape-recorders, 77% had access to an audio tape-recorder of some kind. 62% had their own cassette recorders, though another 7% said they had access to cassette recorders belonging to the OU. Again, this shows an increase in ownership since 1974 when 49% had their own cassette recorders. Although the overall use of audio equipment to record Open University programmes has remained fairly constant - about 20% of all radio programmes being recorded on average - the number of recordings being made on specific courses has increased greatly, a point to which I shall return later when discussing transmission times. Listening behaviour, however, is closely linked to students' access to audio tape-recorders: for instance, in 1976 undergraduate students listened to an average of 47% of radio programmes across all courses, but those without tape-recorders listened on average to only 38%. A similar pattern held for post-experience students, who listened overall to an average of 56% of programmes: students without tape-recorders listened to only 49% on average. This is linked to the further fact that, in 1976, an average of 7% of all programmes was listened to only on a recording of some kind.

As far as ownership of or access to video tape-recorders is concerned, the picture is quite different. Only 12% of our students had access to any sort of video recorder in 1976 and only 5% said they had access to equipment which did not belong to the OU. The only regional variation to emerge was South region, where 25% said they had access to video equipment: this was largely because of the experiment being conducted into the use of video cassette machines which had been placed in ten South region study centres. (These machines have now been withdrawn.) Two occupational groups had higher than average access to video recorders: these were members of the armed forces, and teachers. In each case, 19% reported access. It is rather disappointing however, and a little surprising, that even among teachers only 8% reported the availability of non-OU owned cassette recorders which could be used for study purposes. We are clearly very many years away from anything like widespread domestic ownership of equipment which could be used to record or replay television programmes. However, where video equipment was available, students tended to see more programmes than average. For instance students watched an average of 65% of television programmes across all courses in the sample in 1976. But those who had access to OU-owned video cartridge machines (and these could only have been students in the ten "experimental" centres in South region where recordings of programmes were sent to students on request) watched on average 74% of the programmes: students with access to OU-owned cassette machines also tended to watch more, seeing 69% of programmes on average. This is an important piece of information, confirming both the general advantage of study centre-based video equipment as a back-up to live transmission and the specific benefit of having an easily-operated and reliable machine (such as the cartridge) for student use. Bates and Kern[1] have estimated the average cost of television at 18 pence per minute per student user in 1976. By increasing average viewing from 65% to 74% the cost per user decreases to 16 pence per minute, and the annual average cost per student decreases from £79 to £73. Of course, this is not a "cash" saving, but it is worth noting that the proposals for the provision of a video replay service in study centres would, even in their most ambitious form at an annual expenditure of about £180,000 have cost about £3 per student[3]. Assuming that such a

provision did increase average viewing to 74% - and, given the accuracy of predicted usage of the recently implemented audio service, there is every likelihood that it would - the "total" annual cost per student would be £76, still well below the current estimate.

Ownership of record-players has increased very slightly from 88% in 1974 to 91% in 1976. In the case of A304 "The Development of Instruments and their Music", which makes extensive use of gramophone records, all but one student in the sample had record-players and that student did not complete the course. It would seem that discs are a safe way of getting recorded material to students, indeed there is negligible difference in record-player and VHF radio ownership. The only notable occupational variation in ownership of record-players was among the group of retired students, of whom 18% were without one.

It is perhaps surprising that as many as 47% of students have 35mm. slide-viewers, though here there really are marked differences between groups. For instance only 33% of clerical and office workers had viewers in 1976, while - not surprisingly - 55% of teachers and 57% of forces personnel owned or had easy access to such equipment. There was also variation between courses in the proportions of students having slide viewers: proportionately more students taking Educational Studies, Science and Technology courses had viewers (averaging 58%, 57% and 56% respectively across all courses in the sample).

Finally, it was indeed surprising to find that 88% of our students reported regular and easy access to a telephone which could be used for OU study purposes, including 5% of cases in which the telephone was not actually in the student's own home. This compares with telephone ownership of 54% in the population as a whole, according to the Post Office. Among our own students, in fact, there are some differences between occupational groupings, with only 74% of the farming/mining/manufacturing category having telephones. Students in Wales, Northern Ireland and the South West also had rather lower than average telephone ownership (83%-84%).

Table 3 summarises the proportions of students who owned or had access to various pieces of audio-visual equipment in 1976.

TABLE 3. Ownership of/Access to Audio-Visual Equipment among all Students in 1976

	All students	
	%	Nos.*
Black and white TV	42	23,400
Colour TV	55	30,400
All BBC 2 sets	97	53,800
VHF radio sets	94	52,300
Record-players	91	50,500
Telephones (own home)	83	46,200
(elsewhere)	5	2,900
All telephones	88	49,100
Audio-cassettes (OU-owned)	7	3,900
(non-OU-owned)	62	34,400
Open-reel audio recorders	18	10,300
Cartridge audio recorders	6	3,600
All audio tape-recorders	77	42,800
35mm. slide viewers	47	26,300
Video cassettes (OU-owned)	6	3,200
(non-OU-owned)	4	2,000
Open-reel video recorders	2	1,300
Cartridge video recorders (OU-owned)	1	700
(non-OU-owned)	0.8	400
All video tape recorders	12	6,800

*rounded to nearest 100

While it is likely that the ownership of equipment - particularly of certain items, such as colour television sets and tape recorders - will continue to increase over the coming years, it is equally likely that there will always be some students without particular items. For instance, it appears that BBC 2 set ownership has just about reached saturation point: yet there remain about 2,000 students without such sets and about 3,000 without VHF radios, despite the fact that it was estimated that in 1974 only about 650 and 320 students were not covered by BBC 2 and VHF reception respectively[2]. Moreover, if courses are to be designed on the assumption that students who do not already have particular pieces of equipment will specifically furnish themselves with those items the real cost to the student needs to be assessed. For example, although at present more students have access to telephones than to, say, audio-cassette recorders the purchase of a new audio-cassette machine for OU study would involve a student in a fairly small single capital outlay. On the other hand, the acquisition of a new telephone would involve a rather high initial installation charge as well as a recurrent (and inevitably increasing) rental charge.

Use of Open Forum Broadcasts

Although only a limited number of questions about Open Forum programmes could be included in a questionnaire which was primarily intended to obtain course-related information, there was an attempt to ask a number of questions which would provide the University - and particularly the Open Forum Policy Group - with precise and accurate data on student use of Open Forum programming. Thus, while in our earlier 1974 study students had simply been asked to recall roughly how many of the television programmes they had seen, in 1976 we listed all 13 television programme titles and asked students which of these they had seen during the preceding year. From these responses, we also grouped the actual numbers of programmes seen in order to provide a comparison with the figures obtained in 1974. Table 4 (over) summarises the 1976 data. Because post-experience students watched (and listened) to notably fewer Open Forum programmes, undergraduate and post-experience responses are tabulated separately.

The first thing to note is that the overall proportion of students making no use of Open Forum television is increasing. Earlier surveys showed that 30% in 1972[4] and 47% in 1974[2] saw no programmes: in 1976, however, more than half - 53% of undergraduates and 58% of post-experience students saw none. This increase is due to the growing proportion of experienced students in the system, making little use of Open Forum. Note, for example, that the tendency to watch "no" programmes is not really a gradual trend already by their second year of study, undergraduates were watching not very much more than students in their sixth Open University year. And while the Bates report showed that about half of the more experienced students were watching no programmes, this proportion had increased by about 10% for such students in 1976. On the other hand, there was a similar increase in the percentage of new undergraduates watching at least some Open Forum programmes (61% in 1974, 71% in 1976). Consequently, the actual number of students making any use of Open Forum television has remained fairly constant since 1974. This at least is encouraging. However, it must also be noted that even of new students, the majority watch only a couple of programmes and that only 6% of 1976 entrants watched more than half of the Open Forum broadcasts. Some clues as to the reasons for this relatively low usage come from an examination of Table 5 (page 17) showing which particular programmes were and were not watched.

TABLE 4. Open Forum Viewing - by Year of Intake

Programmes seen	All undergraduates		Year of Intake 1971	1972	1973	1974	1975	1976
	%	Nos.*	%	%	%	%	%	%
None	53	27,200	63	64	63	61	57	29
1-3	29	14,700	23	21	24	25	28	41
4-7	15	7,700	11	13	11	12	13	24
8-10	2	1,200	2	1	1	1	2	5
11-13	0.6	300	0.8	0.4	0.6	0.2	0.4	1
Mean no. of programmes seen (per student)	1.6		1.2	1.2	1.1	1.2	1.4	2.6

Programmes seen	All post-experience students		Year of Intake 1973	1974	1975	1976
	%	Nos.	%	%	%	%
None	58	2,700	39	71	66	57
1-3	30	1,400	46	20	22	31
4-7	10	450	11	3	10	10
8-10	1	60	4	-	0.6	1
11-13	0.5	20	-	6	1	0.3
Mean no. of programmes seen (per student)	1.1		1.9	1.1	1.1	1.2

*rounded to nearest hundred

TABLE 5. Viewing Figures for Individual Open Forum Television Programmes in 1976

Students who watched following programmes:	Undergraduates				Post-experience			
	All students		1976 intake		All students		1976 intake	
	%	Nos.*	%	Nos.*	%	Nos.*	%	Nos.*
Introduction to OU	22	11,200	49	6,000	25	1,150	27	1,040
Visit to Walton Hall	12	6,200	17	2,100	10	470	11	440
What's an OU degree worth?	15	7,500	21	2,600	9	410	9	350
How an OU course is made	12	6,100	17	2,100	10	450	9	390
Doing assignments	19	9,600	32	4,000	15	680	15	580
Student representation	5	2,400	7	800	3	120	3	100
Disabled students	5	2,400	6	800	6	270	6	230
Financial problems	6	3,000	8	1,000	3	150	3	110
Summer schools	17	8,700	42	5,200	7	340	7	260
Open Day at Walton Hall	12	6,300	13	1,700	8	360	7	290
OU vs. private life	9	4,600	11	1,400	6	260	6	230
Exam survival	17	8,500	25	3,000	9	400	9	360
Careers guidance	7	3,700	7	900	4	180	4	140

*rounded to nearest 100

*rounded to nearest 100

It will come as no surprise that the programmes with the biggest audiences were - apart from the general introductory programme - all related closely to aspects of successful course completion, giving information or guidance on how to cope with the three major hurdles in this process - assignments, summer schools and exams - while the relatively large audience for "What's an OU degree worth?" also indicates students' preoccupation with the final qualification. Overall, the table presents a picture much as one would expect, with the "hard" work-related programmes coming out on top, followed by the "soft" general interest programmes - visits to Walton Hall etc. - and with the specific minority-directed programmes - disabled students, or those with financial problems - at the bottom. It is, however, noticeable that the "general interest" programmes which most seem to appeal are those which tend to give students some vicarious experience of being "real" students - visits to the campus, meeting the lecturers and so on. The programmes dealing with broader topics - such as the conflict between OU study and domestic life - drew markedly smaller audiences.

Looking at the actual numbers of students constituting the audiences for Open Forum television programmes it is notable that, although proportionately the audiences are small, in terms of absolute numbers even the least popular Open Forum was watched by more student viewers than course-related programmes on any but the largest Foundation courses (Arts and Social Sciences): consider, for instance, that - at the other extreme - in 1976 the average audience for each of the 16 television programmes on SI285 "Solids, Liquids and Gases" consisted of 65 students. In this context, the audiences for Open Forum look positively glamorous, even if they would hardly turn the head of a Lew Grade or even of an Aubrey Singer. But, taken as a whole, the figures can not be altogether discouraging for the Open Forum Policy Group. It is hardly surprising for instance, that once established in the system most students do not need or want the sort of general support which some of these programmes are designed to give. Moreover it appears that certain groups of students - perhaps those who need more than average support - make more use than others of the programmes: students in the electrical and engineering occupational category, in farming, mining and manufacturing, in transport and communication, clerical and office workers, and shop and sales personnel - all likely to comprise students with below average pre-entry qualifications - tended to make above average use of the programmes in 1976 (as did retired students and those in institutions). However, given the clear preference of all students for the programmes which gave specific guidance on aspects of course work - for instance, two-thirds of the audience for the "exams" programme were not "new" students, and it was these programmes which the occupational groups mentioned above also favoured- it could be useful to develop this aspect of Open Forum, using more of the programmes to help students with specific study skills or techniques, such as note-taking, essay-writing, critical reading, viewing and listening, general organisation of study plans and so on.

Moreover, if we look at the reasons given by students for not watching the Open Forum programmes, we can see that the option "subject matter didn't interest me" was the second most frequently cited reason among both undergraduates and post-experience students.

TABLE 6. Reasons for not watching Open Forum Television Programmes

	Undergraduates	Post-experience
	%*	%*
Never/hardly ever missed	1	1
Didn't know enough about content in advance	20	26
Too many other demands on time	63	55
Subject matter didn't interest me	23	31
Intended to watch more, but forgot	22	14
Previous Open Forum TV disappointing	12	5
Transmission times didn't suit	21	15
No BBC 2 television set	3	2
Other	7	9
No answer	2	4

*Students could choose more than one option, so percentages do not add to 100

It is worth noting that a fifth of the undergraduates and a quarter of the post-experience students said that they didn't know enough about the content of programmes in advance of their screening. This is always a problem when there is a policy of retaining an element of topicality in programming, but it is possible that audiences for Open Forum would increase if publicity were improved, perhaps through more frequent station announcements, notices in study centres, even - for the study/guidance programmes - the advance setting aside of specific transmission dates which could be printed on the broadcast calendars for individual courses. Also, although by no means indicative of a general "thumbs down", it is striking that 12% of undergraduates said they didn't watch because previous programmes had been disappointing. Most of these students may be well-nigh irretrievable as an audience, and although the more experienced students tended to give this reason more frequently (17% of 1971 entrants) there were also 9% of the 1976 intake who gave it, and who could only have been referring to current Open Forum programmes. Such a proportion is very much higher than that choosing the same reason for missing programmes on courses - even those with the lowest viewing figures. Finally it is perhaps surprising that as many as a fifth of students said they missed programmes because transmission times were inconvenient, given that the first transmission (10.10 on Sunday) is considered to be a prime time. Certainly, the repeat transmission, which was at no regular time - being sometimes on Friday and sometimes on Wednesday at 17.00 - was probably out of the question for most students (and indeed it was little used, as Table 7 shows), but it is likely that this - along with the option "too many other demands on my time", chosen by 63% of undergraduates - is something of a blanket reason, indicating a relatively low overall interest in or commitment to Open Forum.

TABLE 7. Open Forum Television: Transmission Normally Viewed (all students)

	No. of students*	%
Both transmissions, normally	169	0.3
Sunday morning, normally	14,900	28
Weekday evening, normally	3,600	6
Sunday and weekday, about equally	3,000	5
None, normally	34,100	61
All finally registered students	55,700	100

The table reflects an almost identical differential use of the two transmission slots as that expressed in the 1974 data,

when similar transmission times were used for Open Forum.

In the case of Open Forum radio, it was not possible to list each programme title. In the first place, about 40 different radio programmes had been transmitted in 1976; secondly, the programmes generally did not have specific titles, consisting in the main of a series of items of presumed topical interest to students. Consequently, the procedure used in 1974 was followed again in 1976. The following question was put to students:

> About 40 different Open Forum radio programmes were transmitted this year. Please give an estimate of the number of these you heard.
>
> Please enter no. (If none, enter 0) [ ]

Table 8 (over) summarises the answers. Again, undergraduate and post-experience data are tabulated separately.

Although the differences are small, comparison of Table 8 with 1974 data shows a similar tendency as for television: a slight increase in the overall proportion of undergraduates listening to no programmes (60% listened to none in 1974) and a concomitant slight decrease in the proportion of new students listening to none (55% in 1974). Even for new students, however, the mean number of programmes heard is small - 4 out of a possible 40 - while already by their second year of study almost 70% of students had stopped listening altogether and the mean number of programmes heard had dropped to 2.

Students were also asked to characterize the regularity of their listening, and indeed there is a close relationship between this and the actual number of programmes which they estimated themselves to have heard.

TABLE 9. Regularity of Open Forum Listening

	Undergraduates	Post-experience
	%	%
Make a general point of listening each week	2	1
Listen fairly frequently	3	1
Listen occasionally	18	11
Never/rarely listen, though think it's probably useful to others	48	56
Never/rarely listen, and think it's probably a waste of time	16	11
Other	11	12
No answer	2	6

Those who said that they listened at least "fairly frequently" for instance had, for the most part, listened to at least a quarter of the programmes: about two-thirds said that they had heard half or more. On the other hand, two-thirds of those who said they listened "occasionally" had heard less than a quarter of the programmes. All in all, then, student enthusiasm for Open Forum radio is less than startling, with only 5% of undergraduates (and 2% of post-experience students) casting themselves as regular listeners. Again, however, this represents about 2,500 total students - the likely audience for any particular programme and a radio audience whose size would only be matched by those for programmes on large population Foundation courses.

In 1976 Open Forum radio programmes were transmitted at 09.05 on Saturdays (except for students in Wales and the

TABLE 8. Open Forum Listening - by Year of Intake

Programmes heard	All undergraduates		Year of Intake					
			1971	1972	1973	1974	1975	1976
	%	Nos.	%	%	%	%	%	%
None	63	32,300	62	68	67	69	68	50
1-9	21	11,000	19	17	19	18	20	30
10-18	5	2,800	4	5	4	4	5	8
19-27	3	1,400	3	2	2	2	2	4
28-36	2	900	3	1	1	1	1	2
37-40	0.3	200	0.4	0.4	0.5	0.1	0.2	0.5
No answer	5	2,700	8	6	5	4	4	5
Mean no. of programmes heard (per student)	2.7		3.2	2.4	2.3	2.0	2.2	3.9

Programmes heard	All post-experience students		Year of Intake			
			1973	1974	1975	1976
	%	Nos.	%	%	%	%
None	68	3,100	43	53	70	68
1-9	20	900	15	24	16	21
10-18	3	150	21	-	3	3
19-27	0.6	30	4	-	-	0.7
28-36	0.9	40	-	6	2	0.7
37-40	0.3	10	-	-	-	0.8
No answer	7	330	16	16	9	7
Mean no. of programmes heard (per student)	1.6		4.6	3.6	1.6	1.6

north of Scotland who received transmissions at 00.45 the following Tuesday) and repeated at 06.40 on Thursdays. As Table 10 shows, the Saturday transmission time was by far the most popular.

TABLE 10. Open Forum Listening: Transmission Normally Listened to (all students)

	No. of students	%
Both transmissions, normally	60	0.1
Saturday 09.05, normally	10,800	19
Tuesday, 00.45, normally	650	1
Thursday 06.40, normally	1,700	3
Saturdays (or Tuesdays) and Thursdays, about equally	2,000	3
None, normally	39,100	70
No answer	1,400	2
All finally registered students	55,700	100

Similar occupational differences were found among Open Forum listeners as had been found among viewers. Apart from retired students and those in institutions, students in the electrical and engineering, the farming, mining and manufacturing, and clerical and office occupational categories tended to listen rather more than average. And again, although proportionately fewer students were listening to any programmes than had been the case in 1974, the absolute numbers making at least some use of Open Forum radio had remained more or less constant.

To summarise, the situation regarding both Open Forum television and radio use by students has neither improved nor deteriorated dramatically since 1974: while overall proportions using each medium have declined somewhat, this has been off-set by a certain increase in the proportions of new students using both. However, the extent

of this usage, even among new students, is extremely low with very few students tuning in to more than a quarter of the available programmes. Nor surprisingly, post-experience students make even less use of Open Forum than undergraduates, presumably because the majority do not perceive themselves as "university students" in quite the same way as others. There is certainly no fund of ill-will among students towards Open Forum - although about an eighth said they did not watch the television programmes because previous programmes had been disappointing, and about a sixth said they thought the radio programmes were probably a waste of time: rather, the prevailing attitude seems to be one of benign apathy. Almost half, for instance, said that although they personally never or rarely listened to the radio programmes, they thought they were probably useful to others. Unfortunately, few students actually do seem to find them useful enough to themselves to make the commitment to watch or listen. However, it has been possible to identify particular television programmes which were quite widely used by students - programmes primarily designed to help students with specific aspects of their studies. If Open Forum audiences - for television and radio programmes - are to be increased, it must almost certainly be achieved through a well-publicised emphasis on more programmes of this type.

Viewing and Listening on Individual Courses

Of the 98 courses in presentation in 1976, information on student use of broadcasting was collected for 91. Between them, these courses presented a complex array of transmission patterns across all faculties and the post-experience area, and over all course levels. Some of the

courses had no repeat broadcasts, others had early morning or late night transmissions. Some had Summer Schools or organised Day Schools where recordings of the programmes could be seen. Moreover, the presentational formats and teaching functions of the programmes varied widely from one course to another, as did the extent to which their importance was stressed to students (in the Courses Handbook): while the D301 course team advised that "the course could be successfully completed if it were impossible to receive broadcasts", the S333 team stressed that "the broadcasts are an essential component of the course". So, although I shall begin by indicating overall and global figures for usage, the most interesting aspects of the analysis lie in the examination of differences in usage between courses and then, within courses, differences between various groups of students in their use of broadcasting.

The procedure used in 1974, of converting the actual numbers of programmes seen and heard by every student on each course into a percentage of the programmes it was possible to see or hear on that course was followed again in 1976. This allowed comparison between courses with varying total numbers of television and radio programmes. Also, for each course and each transmission the percentage scores of all students were averaged, to provide an overall mean score for the percentage of programmes seen and heard on each course. In addition, the distribution of students within each percentage range was tabulated and these data are provided in full in Appendicies V and V1. The figure representing the mean percentage of programmes seen or heard also represents the mean percentage of students watching or listening to any single transmission. (So if the average number of programmes watched on a course was 50%, it is also the case that on average 50% of the students on that course watched any single programme.)

Taking the undergraduate population as a whole, we found that across the 61 sampled courses the average number of programmes viewed was 65% of those transmitted. This is exactly the same percentage as was found in 1974. Moreover, as Figure 1 (page 24) shows, the "spread" of viewing behaviour is practically identical to that found two years ago, with 6% of students watching no programmes and 14% watching them all. Again as in 1974 the distribution is "skewed" to the right, indicating that the majority of students typically watch most programmes. And, as can be seen from Figure 2 (page 25), a very similar spread of viewing was found for post-experience students. Here the mean number of programmes seen was 67%, with 3% watching none and 18% watching all of the programmes. On the whole, then, post-experience students tend to watch more than undergraduates, though the general pattern of viewing behaviour is very similar between the two groups.

This was clearly not so in the case of radio, as comparison of Figures 3 and 4 (pages 26 and 27) illustrates. In the first place, the undergraduate distribution is again almost identical to that found in 1974, with similar proportions - about a third in each case - listening rarely, occasionally and frequently: in fact about a fifth of all students heard no programmes while a tenth heard all. The average number of programmes heard was just under half (47%). Quite a different picture emerges of the listening behaviour of post-experience students, among whom on average 56% of programmes were heard. Here the distribution is almost "normal", with about half the students listening to about half the programmes and groups of about a quarter

Figure 1

Television: Distribution of undergraduates watching different proportions of programmes (all sampled courses)

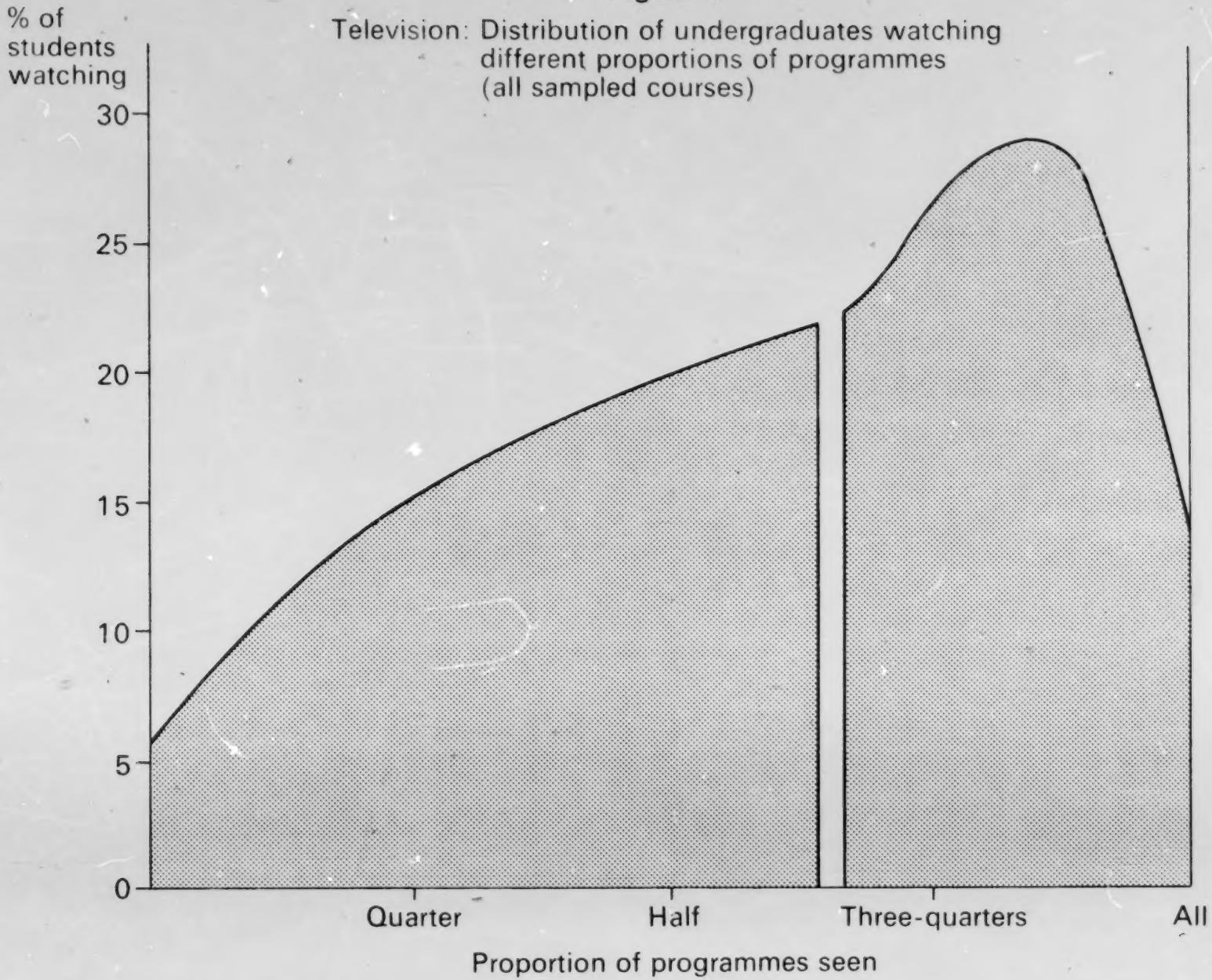


Figure 2

Television: Distribution of post-experience students watching different proportions of programmes (all courses)

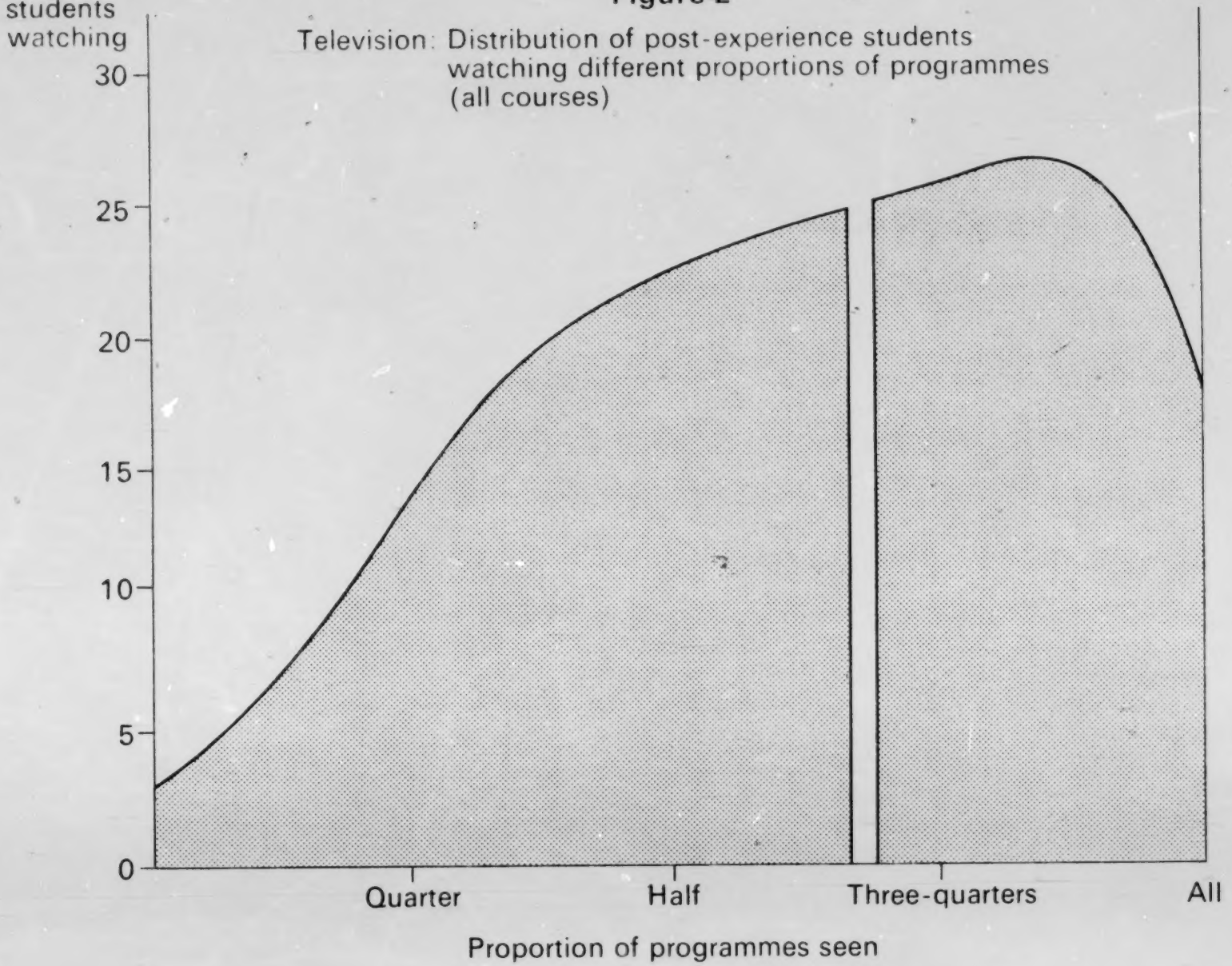


Figure 3

Radio: Distribution of undergraduates listening to different proportions of programmes (all sampled courses)

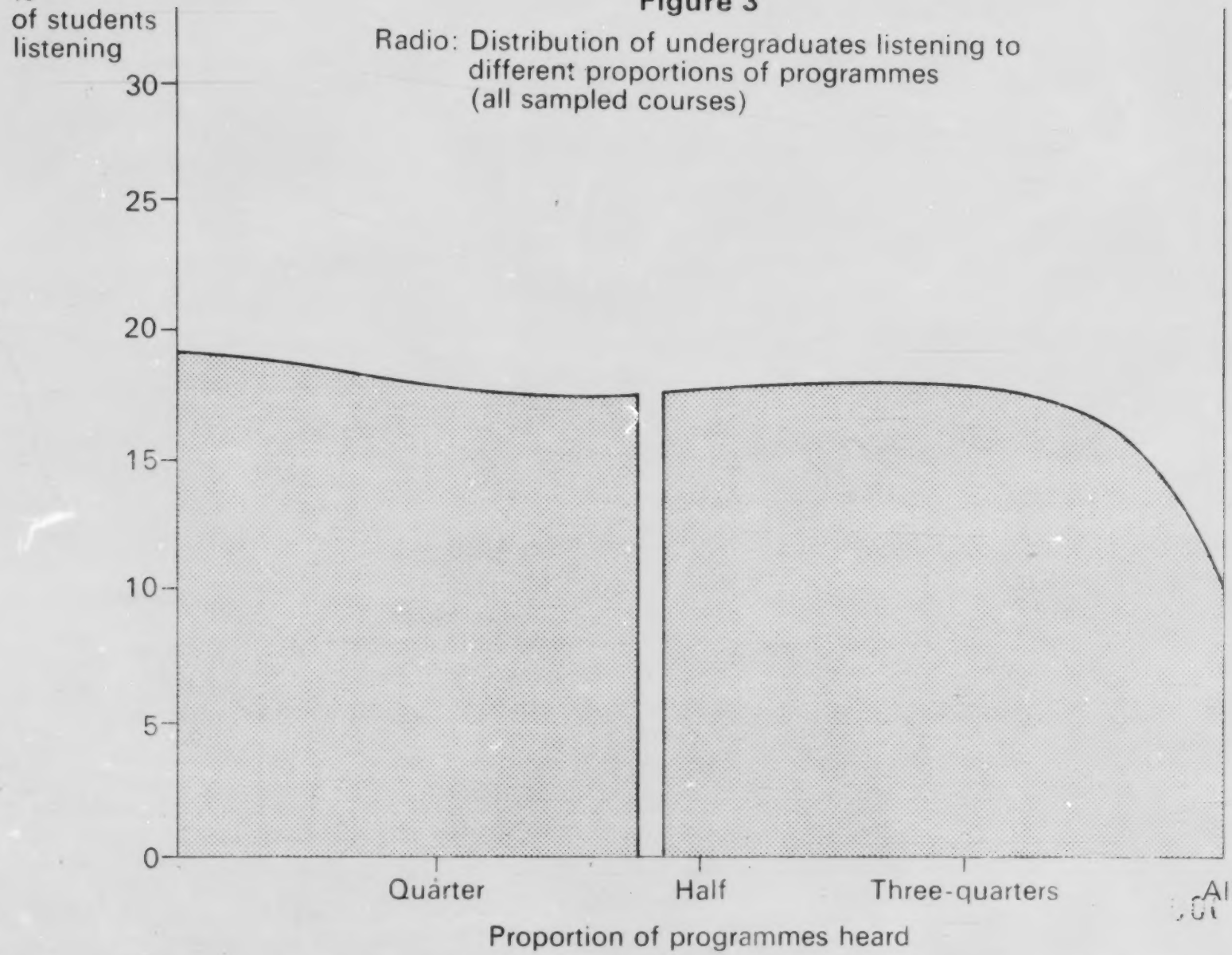
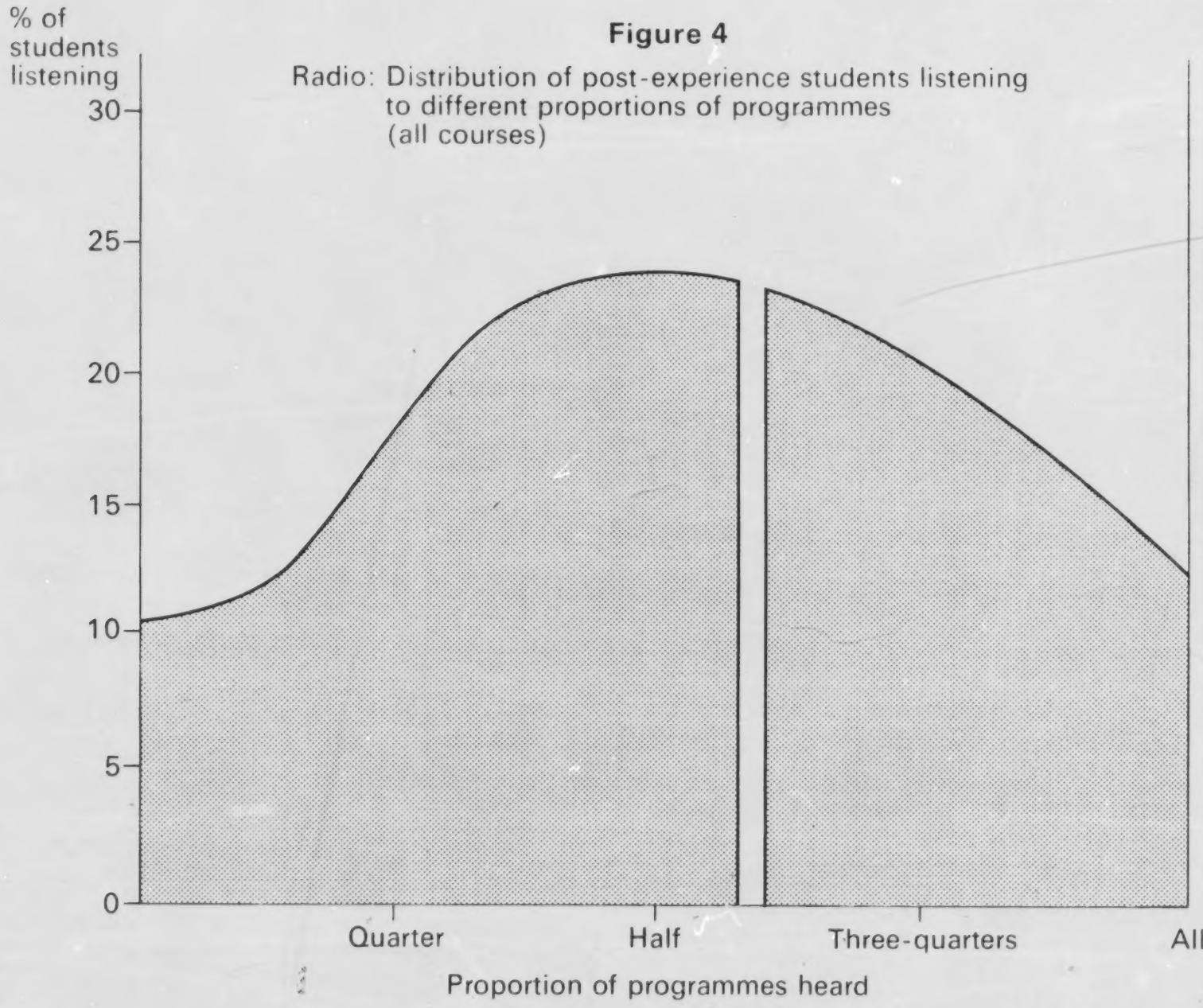


Figure 4

Radio: Distribution of post-experience students listening to different proportions of programmes (all courses)



each listening to few and to most of the programmes. This difference in listening patterns is rather intriguing, and somewhat difficult to explain. It certainly cannot be attributed to any distinguishing characteristic of the radio programmes on post-experience courses. Of the ten courses which were also available to undergraduates, none had above average listening figures among the undergraduate populations. Nor - given their low use of Open Forum radio - can we say that the post-experience students constitute a group of out-and-out radio "fans", inclined to general above average listening. One possible explanation is that post-experience students, being rather more isolated - less likely to attend study centres or to come into regular contact with other students or with tutors - than undergraduates, do not become so imbued with prevailing student "mythology", of which one aspect may well be that radio is a waste of time; indeed, they may tend to use radio at least in part as a means of plugging into the system and reducing isolation. Moreover, it seems likely that post-experience students may in general be rather less preoccupied with their final qualification and thus more prepared to make some use of the whole range of course materials.

Within these overall distributions, there are large differences between courses in the numbers of programmes seen and heard by students. As Figure 5 (page 29) shows, the television programmes on Science courses tend to have much higher viewing figures than most of those in other faculties, with an average of 80% of programmes watched on the Science Foundation course. Apart from Science courses, indeed, the overall average viewing figures for the sampled courses in each faculty were roughly similar (about 60%, compared with 78% for all sampled Science courses). There were wide variations, however, between faculties in the spread of viewing behaviour across the courses. The greatest spread - as might perhaps have been expected - was among courses in the Arts faculty, where the music course A304 and the architecture course A305 had average viewing figures of 71%, matching many Science courses; at the other extreme, on A321 "The Revolutions of 1848", only about a third of the television programmes were viewed on average: this was the lowest viewing figure for any course, despite the fact that these programmes were described - in the Courses Handbook - as playing a "vital" role in the course. The Social Sciences Faculty also had a wide spread of courses, from D331 "Public Administration" - whose programmes formed an "extended case study" - at the bottom with 37% of programmes viewed, to the remade Foundation course averaging 66%. The other faculties had more compact viewing figures. In Educational Studies, the remade courses E201 and E203 had viewing figures very similar to those found in 1974 for the two half-credit courses which they replaced. Of the Technology courses, the highest viewing was of the TD342 "Systems Failures" course: these were assessed. Mathematics does not emerge - as it clearly did in 1974 - as having particularly low viewing figures in relation to those of the other faculties. This is not, however, because new maths courses are very different: viewing figures for the new courses are completely in line with those for the courses sampled in 1974. Rather, the picture has changed because of the appearance of about half a dozen new courses in other faculties - Arts, Social Sciences and Technology - with equally low, or even lower, viewing figures.

The three "post-experience" courses have undergraduate viewing figures roughly in line with those of other courses in the faculties from which these p.e. courses originated, though PE261 "Reading Development" is slightly lower than any other Educational Studies course, while PT272 "Environmental Control" matches the highest course in Technology. However,

Figure 5

Television: Viewing figures for sampled courses : All undergraduates

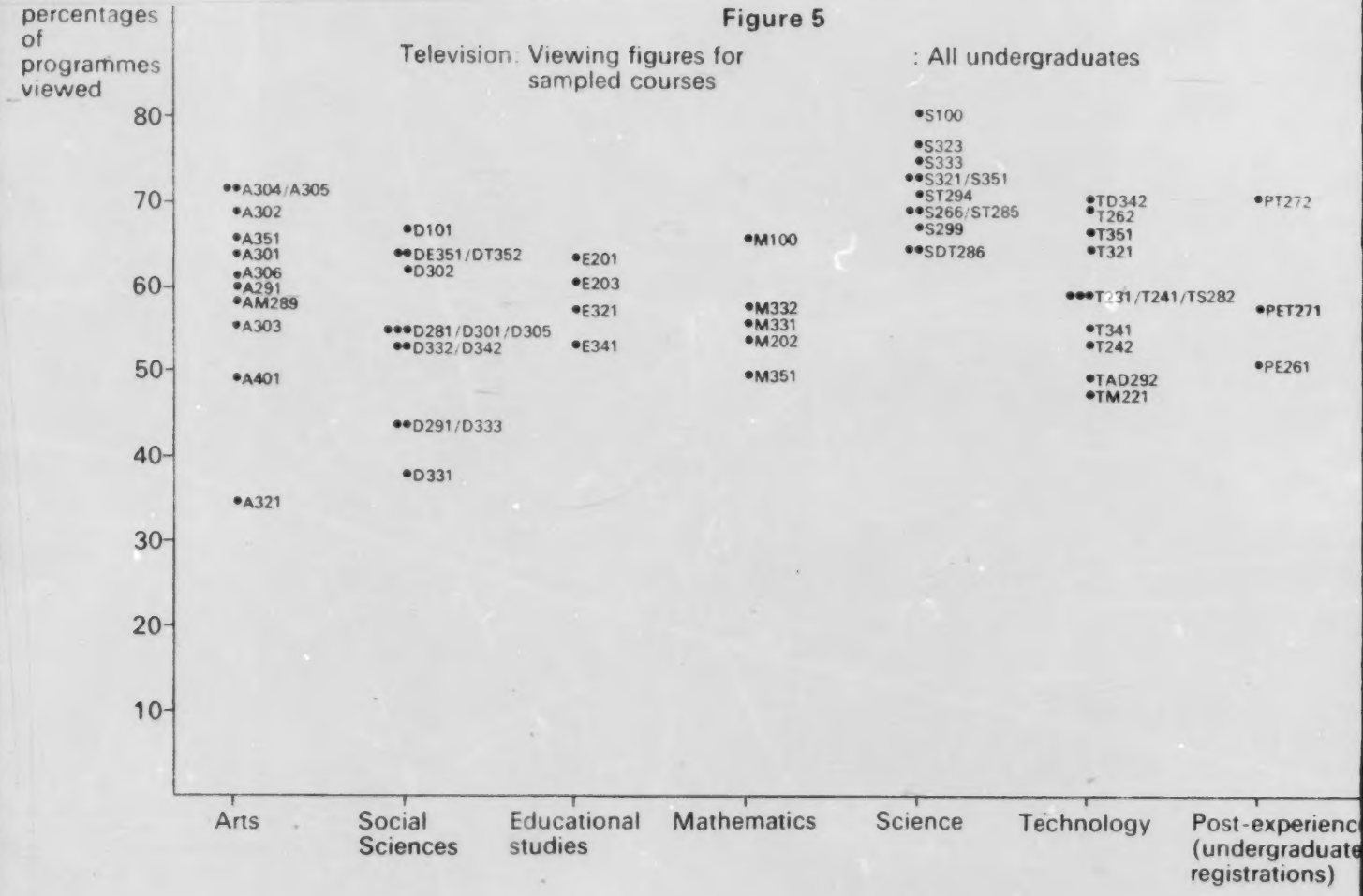


Figure 6

Television: Viewing figures for post-experience courses showing comparative undergraduate viewing figures : All post-experience students

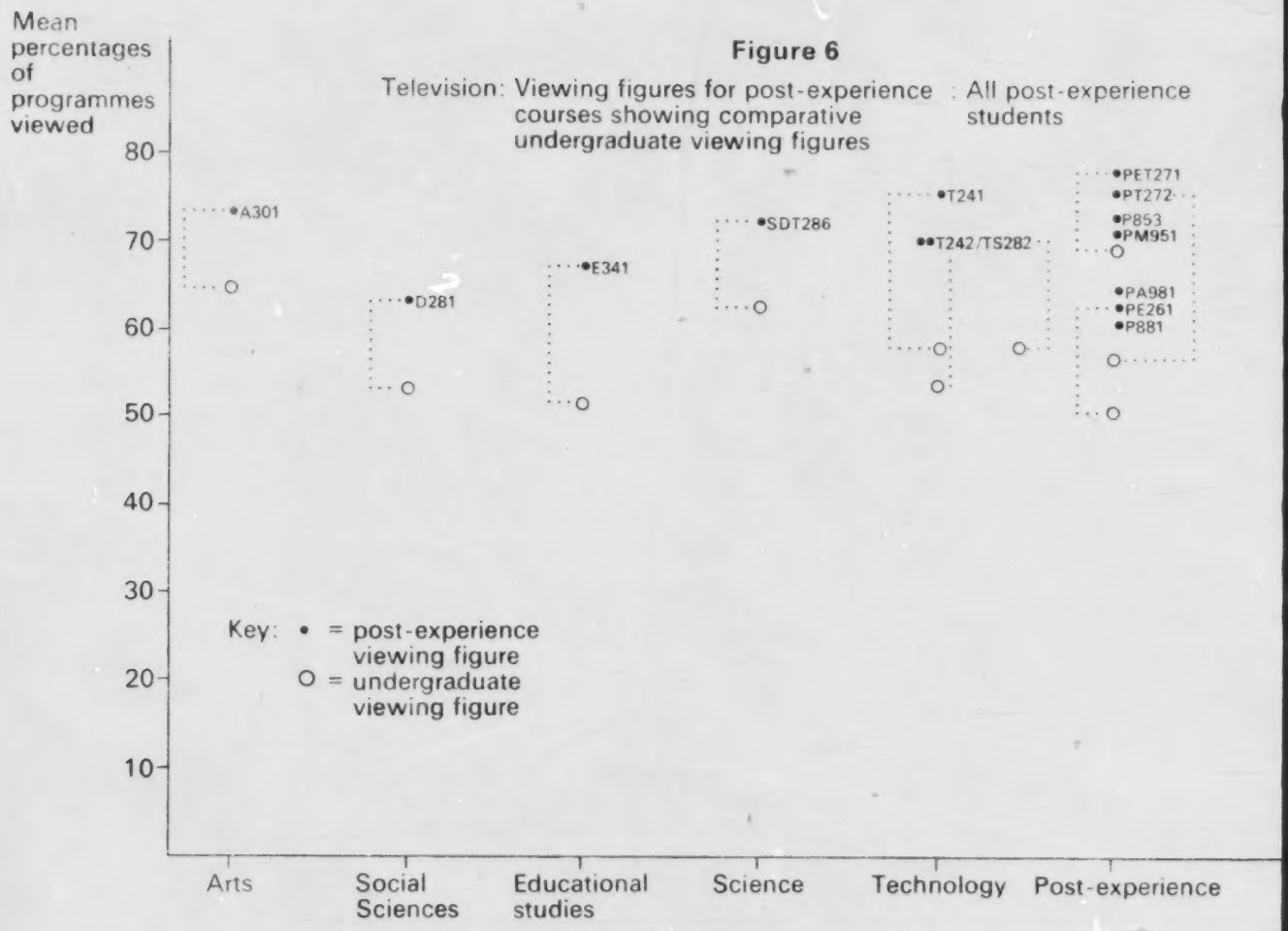


Figure 6 (page 30) illustrates a clear and consistent difference of about 10% between the average number of programmes seen by undergraduates and post-experience students. This holds across all ten courses which were available in 1976 to both groups. In addition, four courses were open only to post-experience registration and these also had high viewing figures relative to undergraduate courses in general: the lowest figure was 62% for P881 "Industrial Relations".

Faculty and course differences for radio listening are shown in Figure 7 (page 32). Programmes on Arts courses had rather higher listening figures than the overall average, with A304, the music course, having - as in 1974 - higher figures than any other: students listened to about two-thirds of the programmes, on average. (This, however, represented a 10% drop in listening and one which was shared by certain other courses. I shall return to this point in the next section.) Other courses with high listening figures were A305, on architecture, and S333 "Earth Science", both of which made extensive use of radio-vision; and TD342 "Systems Failures" whose radio programmes were assessed. Courses in the Mathematics Faculty had markedly lower listening figures, averaging about 35% as in 1974.

As in the case of television, there were notable differences between undergraduate and post-experience listening: these are shown in Figure 8 (page 33). In two cases, A301 "War and Society" and SDT286 "Biological Bases of Behaviour", the differences were negligible. However, most courses had increases of about 10% in post-experience listening figures, compared with those of undergraduates. One course, PET271 "Technology for Teachers" had a staggering 30% difference in listening between the two groups: while undergraduates listened to an average of only 30% of the programmes, post-experience students listened to 60%, on average. Again, as with television, the four courses exclusive to post-experience students had relatively high listening figures, averaging about 55%.

Comparative viewing and listening figures for all 98 courses in presentation in 1976 are summarised in Figure 9 (page 34). Data collected in 1974 are included for courses not sampled in 1976. The overall picture has changed little since 1974. Newer courses do not necessarily have higher viewing and/or listening figures. Indeed, in every faculty except Mathematics there is at least one new course with lower viewing and listening than courses in presentation in 1974. In general, courses with high (or low) viewing figures also have high (or low) listening figures. Notable exceptions to this are S299 (low viewing/high listening), A321 (low viewing/medium listening), AM289 (low listening/medium viewing), DE351 and S323 (high viewing/medium listening). While Science viewing figures are clearly higher, and Maths listening figures clearly lower than average, the differences between other faculties are not great. Educational Studies has the most compact figures both for television and radio, with a spread of only about 10% between the most and least used programmes: there are no either dramatically high or low courses - in terms of viewing and listening - in this faculty. The most striking aspect of Figure 9, however, is its illustration of the high level of viewing and listening among post-experience students. The extent of their television viewing is equal to that of Science students, while in general they listen to more radio programmes than Arts students, who tend to be the most regular undergraduate listeners.

The range and variety of these results indicates something of the near impossibility of reaching any conclusions or passing evaluative judgements on the basis of viewing and listening figures alone. For although some faculties obtain

Figure 7

Radio: Listening figures for sampled courses : All undergraduates

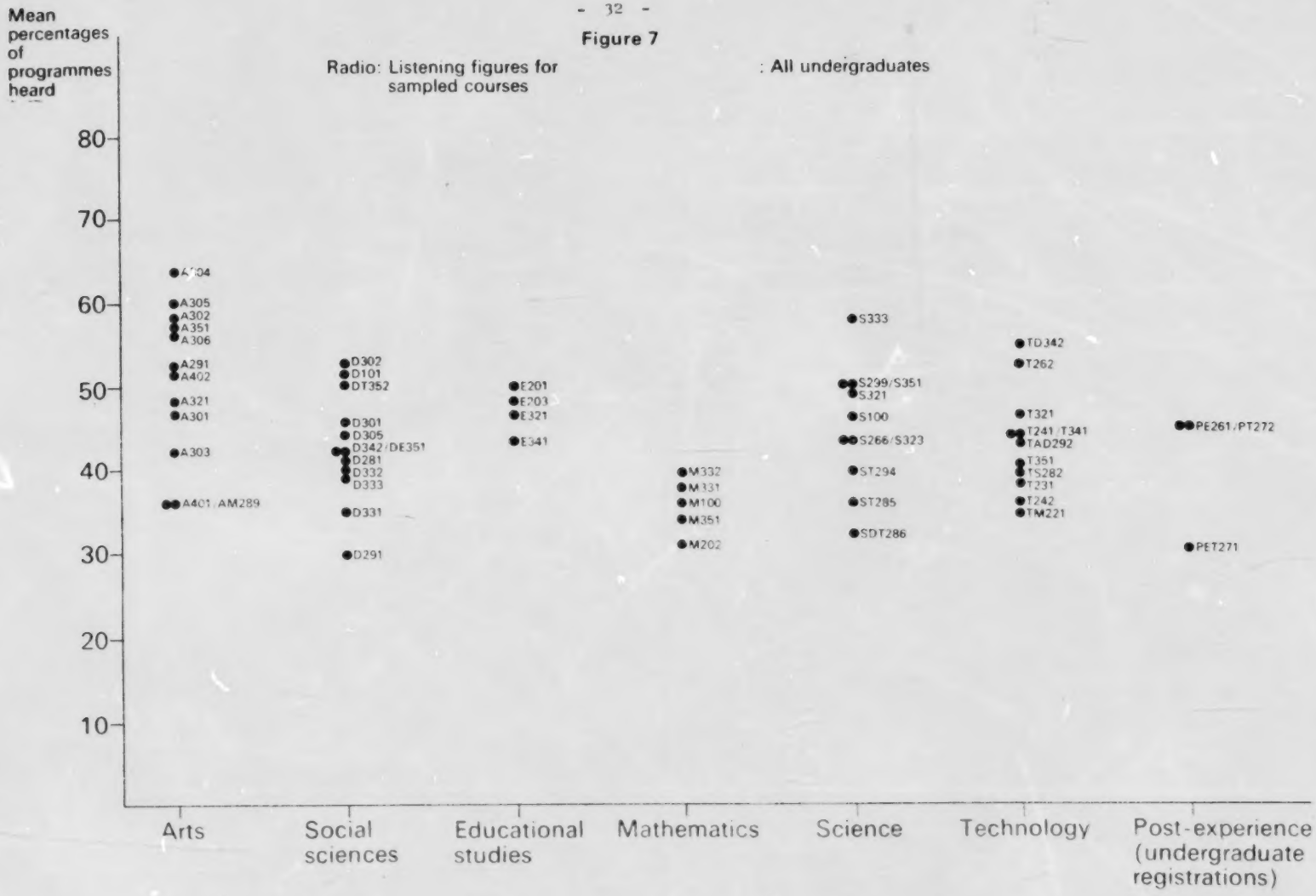


Figure 8

Radio: Listening figures for post-experience courses showing comparative undergraduate listening figures : All post-experience students

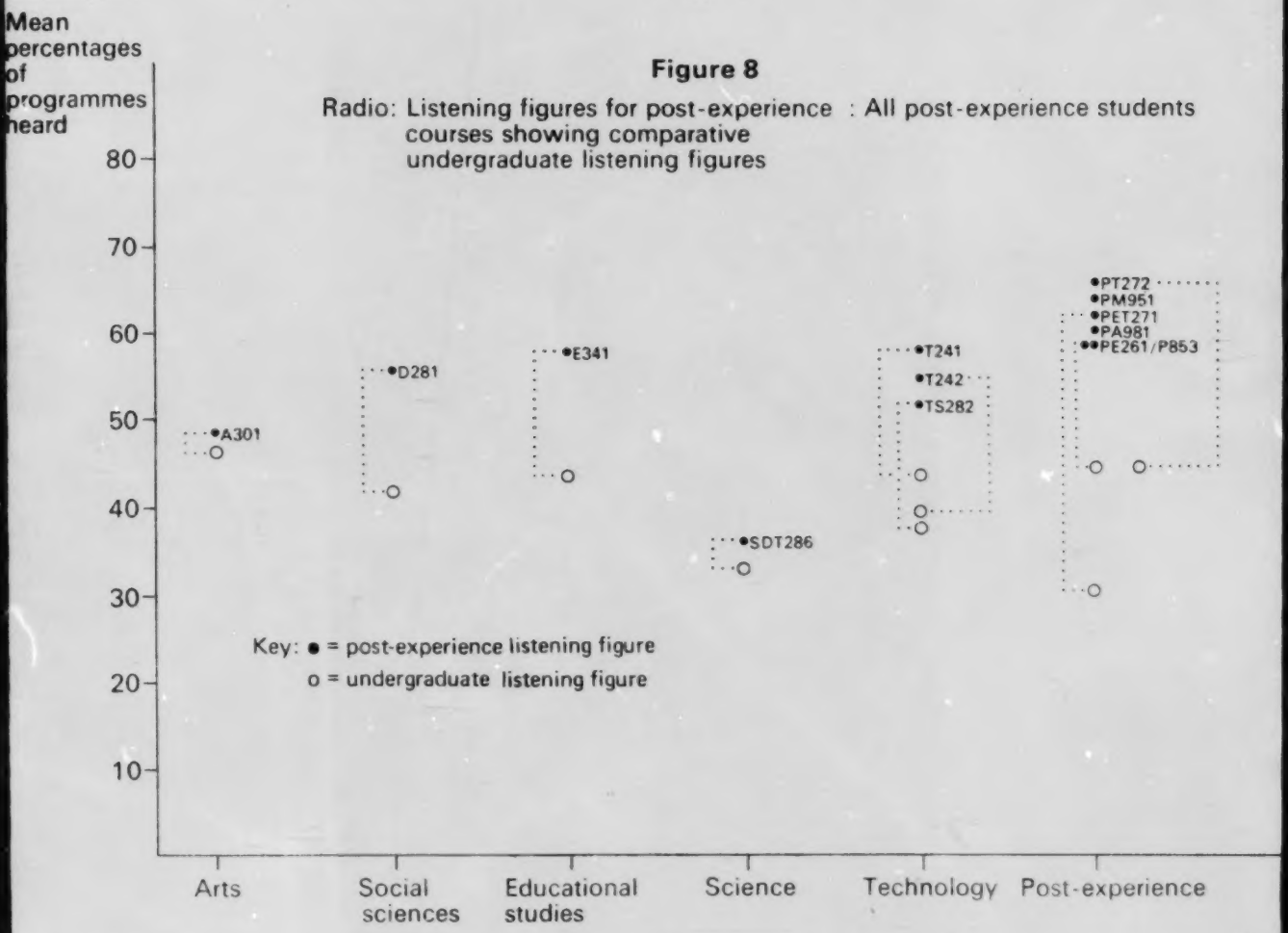
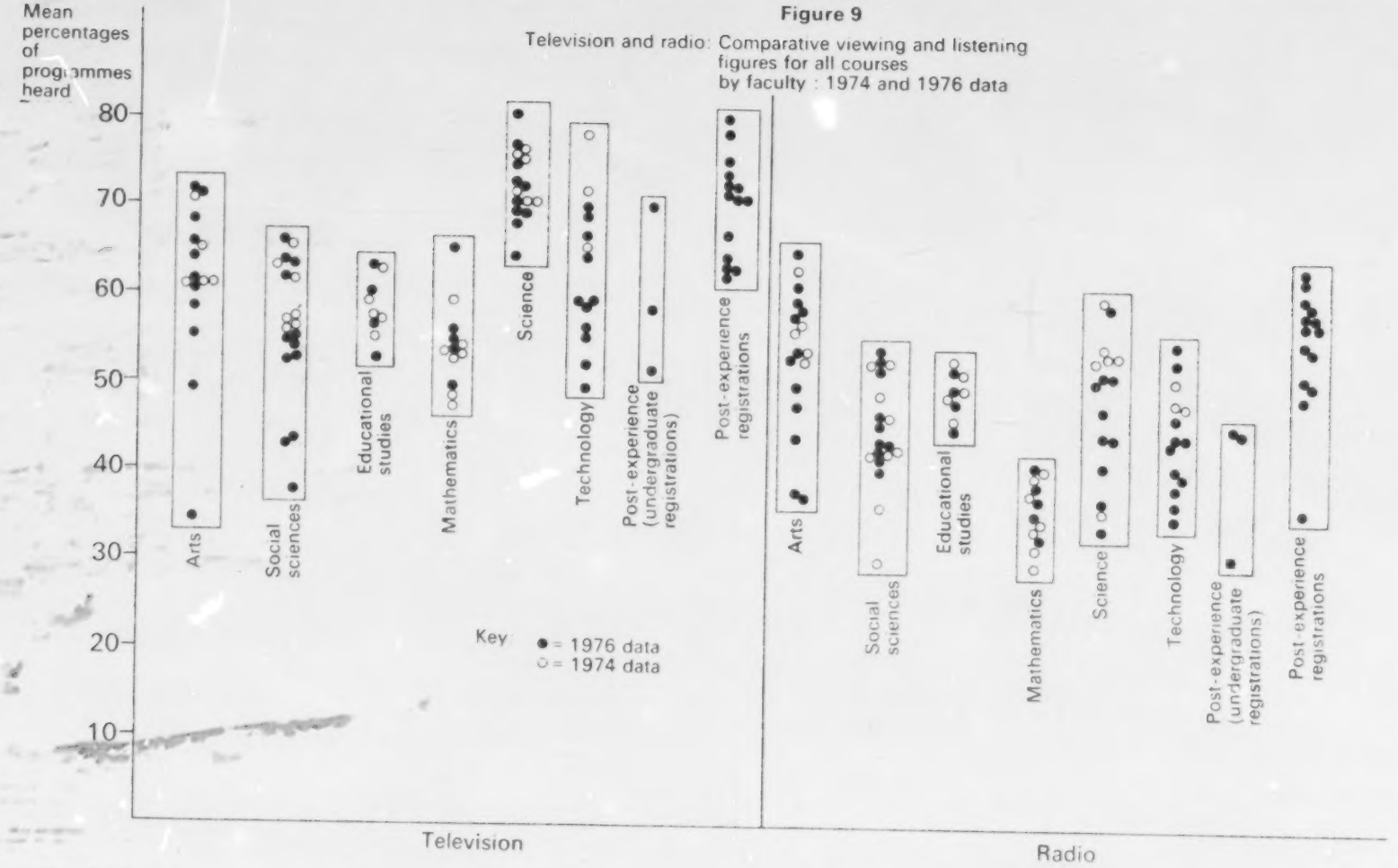


Figure 9

Television and radio: Comparative viewing and listening figures for all courses by faculty : 1974 and 1976 data



higher figures than others in general, there are always certain courses with individually lower figures than courses in other faculties where figures are typically lower. Why? And although the assessment of broadcasts does appear to push up viewing and listening, there are other courses - within the same faculty - with just as high viewing and listening figures for programmes which are not assessed. Why? Although the use of radiovision is in some cases - A305, S333, S299 - linked to high listening, in others - TM221, ST294, S323 - it is not. Why? Although most courses with high viewing also have high listening figures, some do not. Why? Although some new courses are among the highest, in terms of viewing and listening, some are among the lowest. Why? Most importantly, although some programmes are little used by one group of students (undergraduates), the same programmes are relatively highly used by others (post-experience students). Why? These and other questions must be tackled before any conclusions can be reached about the relationship between viewing and listening behaviour and the merits or value of the programmes themselves: I shall return to this issue in the next section.

Broadcasting in a Course Context

One way of shedding more light on the use made of broadcasting is to examine students' own perceptions of the relationship of television and radio to other course components in terms of specific criteria. To allow us to do this, students were asked to rate the various components of the courses for which they had been sampled in terms of (a) their helpfulness in assisting learning and (b) the extent to which they aroused or increased interest in the course. A total of fourteen possible components was listed, five more than in 1974. The additions were audio-cassettes, broadcast notes, computer practicals, records/discs, and telephone tutorials. Also, the category "correspondence tutoring" was described in more detail, since it was felt that some students had misunderstood what was meant by this in 1974. The precise questions asked were:

Q. 39. Please indicate for this course the extent to which the various components of the course listed below have assisted your learning.
(Please answer once for each component.)

	Very helpful	Fairly helpful	Not very helpful	Not at all helpful	Didn't use	Does not apply
Audio-cassettes	1	2	3	4	5	6
Broadcast notes	7	8	9	0	X	V
Computer practicals	1	2	3	4	5	6
Correspondence texts	7	8	9	0	X	V
Correspondence tutoring (e.g. advice, comments from tutor on TMAs)	1	2	3	4	5	6
Counselling	7	8	9	0	X	V
Home experiment kit	1	2	3	4	5	6
Radio	7	8	9	0	X	V
Records/discs	1	2	3	4	5	6
Set books/s	7	8	9	0	X	V
Summer School	1	2	3	4	5	6
Television	7	8	9	0	X	V
Tutorials: face-to-face	1	2	3	4	5	6
by telephone	7	8	9	0	X	V

and:

Q.40. Please indicate for this course the extent to which the various components of the course listed below have aroused or increased your interest in the course.
(Please answer once for each component.)

Component	A great deal	Quite a lot	Not a lot	Not at all	Did not use	Does not apply
(These were listed as in Q.39.)						

The first point to be made is that although some components were generally very much more highly rated for "helpfulness" than for "interest" - broadcast notes, correspondence texts, correspondence tutoring, set books - the reverse was not true. So while for certain components the two ratings were, in general, very similar - television, radio, counselling, home experiment kits, summer schools, tutorials - it was very rarely indeed that the "interest" rating exceeded the rating for helpfulness. Even when there were differences - as, for instance, for television programmes on some Arts courses, for counselling and summer school among "weaker" students (i.e. those gaining lower examination grades) - these were always very slight, extremely rarely exceeding 3%-4%. This pattern held across all courses in the sample, across post-experience and undergraduate students, across all student ability levels, across drop-outs and those who completed the course. The inference seems to be that students perceive the various components primarily in terms of their helpfulness in the strict learning process. While some are perceived as less helpful than others, they are still perceived or experienced as being as helpful as they are "interesting" or "motivating" in a broader sense. For this reason, and because of the sheer bulk of data involved, the "interest" ratings are not included in this report. The "helpfulness" ratings discriminate more adequately between components, and provide a picture which can be compared easily with that which emerged in 1974. ("Interest" ratings for all components are, however, included in the computer tabulations for all courses which have been distributed to maintenance Course Team Chairmen, and a copy of which is held in the library.)

The results from the question on helpfulness are summarised for each course in Appendices VII and VIII. The data are presented in two ways. In Appendix VII, two descriptors are used for comparative analysis. These are the proportion of students on a course finding each available component "very helpful" and the proportion not making any use of the component. These descriptors provide an indication of the most positive and most negative responses to each course component. They were used in the 1974 analysis and the rationale behind their selection is given in the Bates Report: their use here allows comparison of the new data with that collected two years ago. In Appendix VIII, the "very helpful" rating is given for only those students who actually used the particular component. Thus, from a comparison of these two sets of data it is possible to see not only how many students did not choose to (or perhaps, in some cases, could not) make any use of specific aspects of the course - and this may, in itself, be a statement of the perceived value of those components - but also how students who did use the various components rated their relative helpfulness in assisting learning.

The data from Appendices VII and VIII are collated in Table 11, which shows the average percentages of students in each faculty rating the various components as very helpful or not using them, and in Figures 10 and 11 (pp. 41 and 43) which illustrate - again for each faculty - the

TABLE 11. PERCENTAGES OF STUDENTS RATING AS VERY HELPFUL OR NOT USING VARIOUS COURSE COMPONENTS: BY FACULTY

FACULTY	AUDIO-CASSETTES		BROADCAST NOTES		COMPUTER PRACTICALS		CORRES-PONDENCE TEXTS		CORRES-PONDENCE TUTORING		COUNSELLING		HOME EXPERIMENT KIT		RADIO		RECORDS/ DISCS	
	VERY HELPFUL	NOT USED	VERY HELPFUL	NOT USED	VERY HELPFUL	NOT USED	VERY HELPFUL	NOT USED	VERY HELPFUL	NOT USED	VERY HELPFUL	NOT USED	VERY HELPFUL	NOT USED	VERY HELPFUL	NOT USED	VERY HELPFUL	NOT USED
ARTS	-	-	29	8	-	-	75	1	46	5	7	65	-	-	25	16	60	3
SOCIAL SCIENCES	-	-	23	7	7	41	77	2	36	7	5	63	46	12	14	21	6	40
EDUCATIONAL STUDIES	-	-	24	6	11	51	76	2	31	8	6	59	-	-	16	15	-	-
MATHEMATICS	-	-	30	10	44	21	81	2	40	9	9	65	67	15	12	35	-	-
SCIENCE	31	14	35	4	-	-	80	2	31	7	10	60	21	8	10	24	-	-
TECHNOLOGY	-	-	24	7	27	32	73	2	27	8	4	66	31	9	9	25	10	22
POST-EXPERIENCE (undergraduate registration)	-	-	24	7	-	-	82	2	26	6	5	67	36	10	11	23	-	-
ALL UNDERGRADUATE COURSES	31	14	27	7	22	36	78	2	34	7	7	64	40	11	14	23	25	22
POST-EXPERIENCE REGISTRATIONS	-	-	29	6	30	28	77	2	31	8	5	61	42	7	15	12	-	-

TABLE 11 (cont.). PERCENTAGES OF STUDENTS RATING AS VERY HELPFUL OR NOT USING VARIOUS COURSE COMPONENTS: BY FACULTY

FACULTY	SET BOOKS		SUMMER SCHOOL		TELEVISION		CLASS TUTORIALS		TELEPHONE TUTORIALS	
	VERY HELPFUL	NOT USED	VERY HELPFUL	NOT USED	VERY HELPFUL	NOT USED	VERY HELPFUL	NOT USED	VERY HELPFUL	NOT USED
ARTS	68	1	62	7	31	9	37	22	8	64
SOCIAL SCIENCES	48	4	49	9	22	12	25	32	8	67
EDUCATIONAL STUDIES	51	4	-	-	21	11	26	33	8	66
MATHEMATICS	43	12	57	6	28	14	37	31	6	69
SCIENCE	39	5	60	16	46	5	33	28	8	68
TECHNOLOGY	34	16	42	19	31	9	26	32	7	70
POST-EXPERIENCE (undergraduate registration)	46	3	-	-	26	9	19	39	7	73
ALL UNDERGRADUATE COURSES	47	6	54	11	29	10	29	31	7	68
POST-EXPERIENCE REGISTRATIONS	55	2	59	14	29	4	24	29	5	73

percentage of undergraduate and post-experience students making any use of each component who rated that component as "very helpful". These faculty results require some care in interpretation. Since, for instance, not every course has every "component", an average faculty rating can be misleading. Moreover, it is particularly important to remember here that not all Open University courses were included in our sample, so that the data hold strictly only for those 61 courses which were sampled. However, having said that, it can also be said that - with one or two exceptions to which I shall refer - the results in general tally well with the information for each faculty produced in 1974 (when all courses were represented), and it thus seems justifiable to examine - briefly - student ratings of the components in terms of rough faculty differences.

Not surprisingly, the correspondence texts were by far the most highly rated component in every faculty, with more than three-quarters of students finding them very helpful (Table 11), even in Mathematics where in 1974 they received below average ratings. The only other aspects of the courses to come anywhere near this sort of rating were set books and summer schools, which - overall - about half the students rated "very helpful" although in fact there were substantial inter-course differences here. Television was on a par with these elements in the Science Faculty where indeed it was out-rated by only correspondence texts and summer schools. Elsewhere, however, it was highly rated by only about a third, with only about a fifth of students in Social Sciences and Educational Studies finding it "very helpful". Indeed, students in these faculties rated the broadcast notes rather more highly than the programmes themselves. Overall, about a quarter of students found the notes very helpful, though this rose to a third in Science. Although a quarter of Arts students rated the radio component highly, this was generally the least highly rated of all components, apart from counselling (which hardly counts, since it is not course-related above Foundation level). Of other components, correspondence tutoring was overall rated more highly than in 1974, indicating that students probably had indeed misunderstood what had been meant by the term in the earlier study. Nevertheless, it may still be somewhat worrying that only about a third of students overall found this "very helpful" in assisting their learning, the percentage ranging from 46% in Arts to 26% in Technology. Home experiment kits were in general not strikingly highly rated - again in line with 1974 findings - by far the most helpful being the advanced electronic calculator used in M351 "Numerical Computation". About a third of students did not use class tutorials, and although about 30% said they used "telephone" tutorials it seems likely that many of these referred to individual telephone contact with the tutor, rather than with the telephone group tutorials which were introduced on a smallish scale in 1975 and 1976. A final point of note emerging from Table 11 is the striking similarity in ratings for specific components by undergraduate and post-experience students. Although we have seen that the latter, for instance, made considerably more use - in terms of viewing and listening - of television and radio than the undergraduates, when it came to appraising the helpfulness of the broadcasts the overall verdict was almost identical between the two groups.

So far, we have been looking at total student response to the various course components. In other words, the percentages of students reported in Table 11 as finding, say, television "very helpful" is the percentage of all students, including those who watched none of the programmes. There are all sorts of reasons why students do not make full use of all the materials and study aids offered by course teams. In some cases, this is certainly a matter of choice -

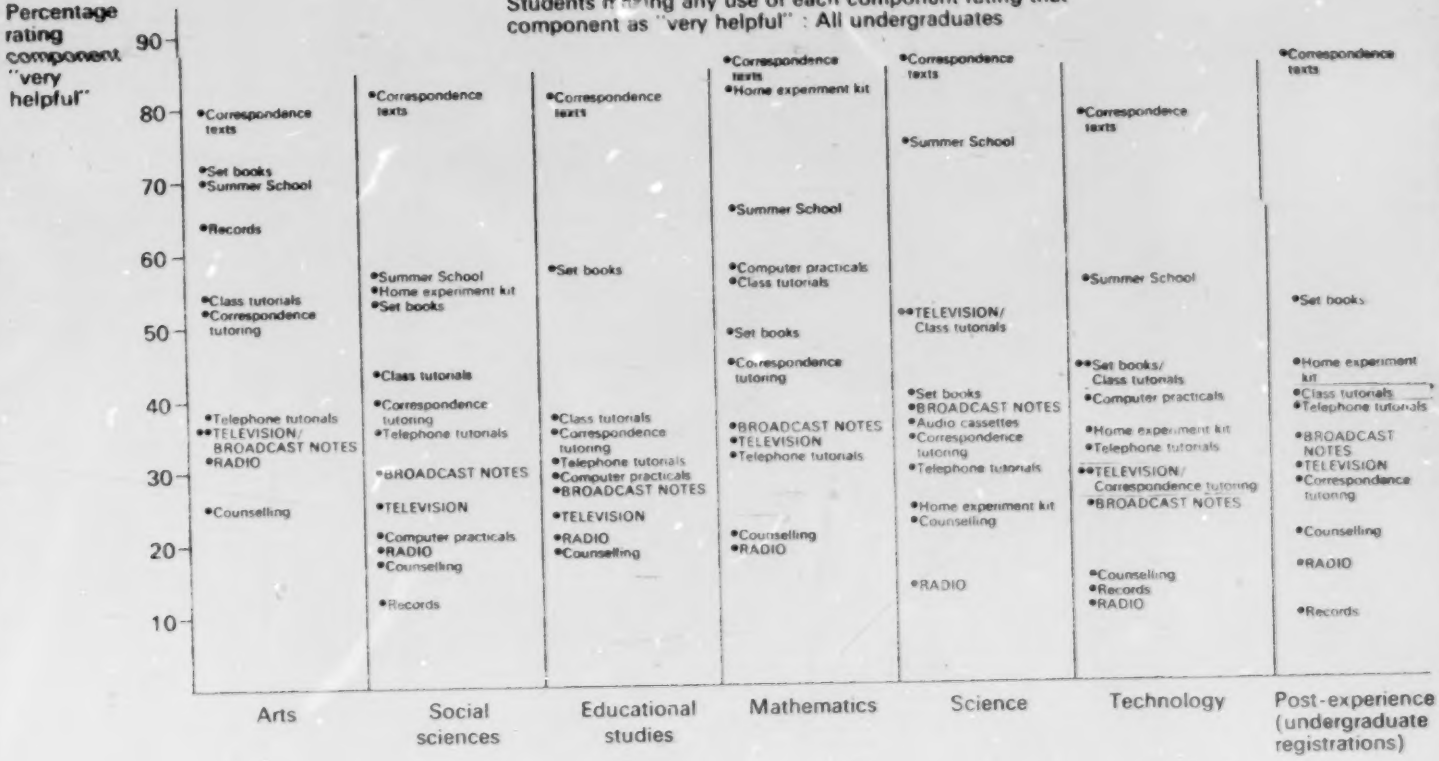
as for instance in the non-use of home experiment kits. In others, there may or may not be an element of choice: for example, the thirty per cent or so of students who make no use of class tutorials is undoubtedly composed of some who choose not to attend, deciding perhaps that their time is better spent on other aspects of their studies, and some who through choice would attend but are unable to for various reasons. If students do not use broadcasts, this may be because they are under pressure and perceive the programmes as inessential, or because the transmission times conflict with working hours, or because the programmes deal with aspects of the course in which they are not particularly interested, or because they find it difficult to learn from television or radio, and so on. So although we can say that not making use of some aspect of the course may reflect on its value, or perceived value, this is not necessarily so. It is perhaps safer then to look to those students who made at least some use of the various components to establish a picture of their perceived relative usefulness.

Figures 10 and 11 provide such a picture. The first striking aspect of it is the relative repositioning of tutorials - both face-to-face and by telephone - vis a vis the other course components. This is because the rather high proportions of students not using tutorials had the effect of depressing their overall ratings. As a consequence, both the television and radio components now come fairly near the bottom in every faculty except Science, where television is still rated more highly than all but the correspondence texts and summer school: even here, however, class tutorials are now on a level with television. A further consequence of the exclusion of "non-users" is a relatively big increase in the rating level of television and radio in the Mathematics Faculty. The increase is more marked for television, which is now rated more highly only in Science and Arts. This means that although fairly large proportions of maths students did not use the broadcasts (14% for television, 35% for radio) those who did found them relatively helpful. Indeed the Mathematics results as a whole must be encouraging to the designers of more recent courses in the Faculty. In contrast with rather poor student ratings in 1974 for most components on some of the earlier courses, new maths courses were highly placed by students in terms of helpfulness of texts, set books, broadcasts and notes, and tuition of all varieties.

The Arts Faculty also had generally above average ratings for the various components of its courses, particularly for radio and for correspondence tuition. The gramophone records on A304, the music course, were reported as very helpful by 93% of those who used them, while the summer school for this course was also clearly successful, three-quarters of students finding it very helpful. A304 radio programmes were the most highly rated of any among the 61 sampled courses, with 50% reporting them as very helpful. In contrast, courses in the Educational Studies Faculty display a set of rather depressed and remarkably compact ratings - within the 25% to 35% range - for all components except correspondence texts and set books. The remade courses E201 and E203 were rated very similarly in every respect to the ratings obtained by their two predecessors in 1974, the only exception being the E203 television programmes which were found very helpful by a quarter of students compared with a sixth for the E283 programmes in 1974. There was no such increase, however, in the ratings for the E201 broadcasts, even though these are now linked to the course assessment. The compression of ratings in Educational Studies courses might be attributed to some special characteristic of students in the Faculty, such as the preponderance of teachers who might be particularly instrumental in their approach. However, no difference was found in the ratings or viewing and listening behaviour of

Figure 10

Students making any use of each component rating that component as "very helpful" : All undergraduates



teachers as opposed to those of other occupational groups, either in this Faculty or any other. Moreover, the post-experience students registered for E341 "Methods of Educational Enquiry" who might be assumed to be somewhat less instrumental - rated it on every count almost identically to the undergraduate rating, although they did indeed watch and listen to about 10% more programmes, on average. On what evidence exists, then, the ratings do not appear to be attributable to any particular characteristic of students taking these courses.

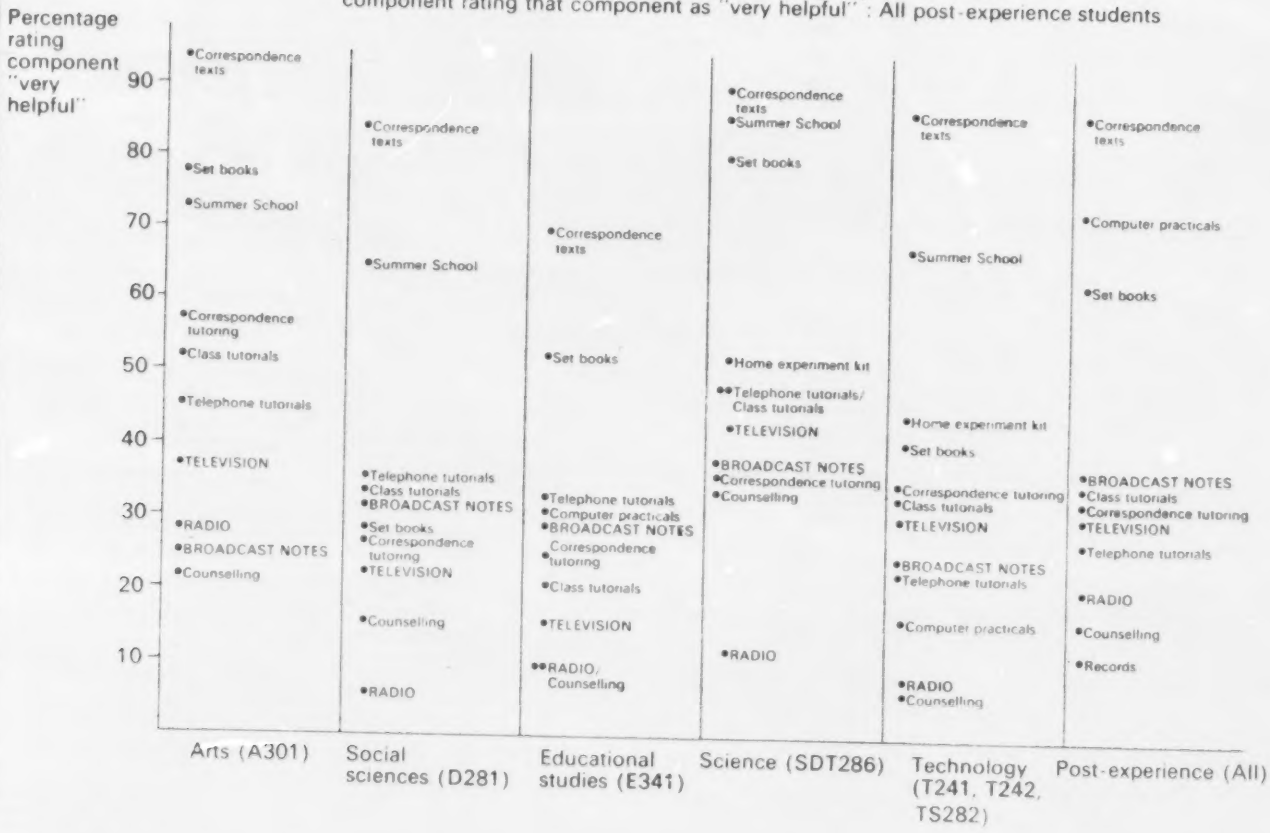
The third remade course in the sample - D101 - was also in most respects rated very similarly to the 1974 ratings for D100. The set books for the new course, though, were reported very helpful by 63% of all D101 students, while the figure for D100 was 35%. A couple of other components on the other hand - television and summer school - were rated very helpful by about 10% fewer students than their equivalents on D100. Four Social Science courses scored particularly highly on their use of audio-visual media. These were D302 "Patterns of Inequality", D332 "International Politics", DE351 "People and Work" and DT352 "People and Organizations": all of these had well above average ratings for radio and television programmes and, in the case of D302, DE351 and DT352, for broadcast notes. Two of these courses had a broadcast-related assignment policy and two did not.

In Science one of the most striking features was the relatively low value placed by students on home experiment kits, the only exception being SD1286 "Biological Bases of Behaviour" where 40% of users found the kit very helpful. In general not more than a quarter of students found their kits very helpful and indeed on the chemistry courses S351 and ST294 about a sixth of students did not use them at all. The other disturbing feature of the Science courses was the continuing low usage and rating of radio. On three courses - S266 "The Earth's Physical Resources", ST285 "Solids, Liquids and Gases" and ST294 "Principles of Chemical Processes" - about a third of students made no use whatever of radio. And of students who did listen only 14% across all Science courses found the programmes very helpful. The exceptions were S299 "Genetics" and S333 "Earth Sciences" where about a quarter rated the radio highly. These were both new courses in 1976, using radiovision programmes. The jointly produced "Genetics" course stood out for the comparatively low rating of its correspondence texts - 69% finding them very helpful in a faculty where the average was 85%. The television programmes on this course, although getting a relatively low viewing figure (Figure 5, page 29) were quite highly rated. The programmes which most students found most helpful, however, were for S321 "Physiology of Cells and Organisms": these were concerned with the experimental techniques used to obtain the data discussed in the correspondence texts, and 61% of students found them very helpful.

Home experiment kits were also poorly rated by Technology students, except for those taking TM221 "The Digital Computer", where students were actually issued with a small computer, and TS282 "Electromagnetics and Electronics": in each case, over two-thirds found the kits very useful. Particularly low ratings were given to the kits on T241 "Systems Behaviour" and TD342 "Systems Failure". Technology summer schools also received below average ratings, particularly that for another systems course T341 "Systems Modelling". The exception here was TAD292 "Art and Environment" whose summer school was found very helpful by almost three-quarters of students. This course stood out as something of a maverick in the Technology Faculty, rated low on components typically rated high - correspondence texts, set book ("The Last Whole

Figure 11

Post-experience students in each faculty making any use of each component rating that component as "very helpful" : All post-experience students



Earth Catalog"), television (by far the lowest rating in the Faculty) - and high on those generally rated low in Technology - correspondence tutoring, summer school and tutorials. By far the highest rating for television - 51% finding the programmes very helpful - went to TD342, whose radio programmes also had a higher rating than any others: assignments are set on both television and radio, and indeed the radio programmes have now (1977) been withdrawn and distributed to students on cassette. Over all the sampled courses, student rating of radio was very low indeed - very similar to the Science pattern. Only 13% of Technology students, on average, found the programmes very helpful. On three courses - T242, TM221 and TS282 - over a third made no use at all of the radio broadcasts. On TM221, radiovision tutorials - giving advice on assignment completion, "mock" assignments and so on - were considered so important that students were provided with transcripts of these programmes. It is possible that this may have actually depressed the numbers of students making any use of the programmes themselves.

The differences noted earlier between undergraduates and post-experience students in viewing and listening behaviour disappeared when it came to student assessment of the helpfulness of the various course components (including television and radio). As comparison of Figures 10 and 11 (pp. 41 and 43) indicates, the post-experience students gave very similar ratings throughout to those of undergraduates. Of the four courses available only to post-experience students, P881 "Industrial Relations" received below average ratings across all components; P853 "The Handicapped Person in the Community" (now PD251 and open also to undergraduates) was highly rated on all counts but particularly for broadcast notes, radio and television.

It is clear, then, that there are important differences both between and within faculties in the ratings which students give to courses. Moreover, although there do appear to be some <u>generally</u> highly - or poorly - rated courses, there are others where specific components are very much more highly rated than others within the same course. Most interestingly, there are at times substantial differences between viewing and listening figures and student rating of the programmes. This can be seen by comparison of Figures 5 and 7 (pp. 29 and 32) with Figures 12 and 13 (pp. 45 and 46) where the same bases and scales are used to show the different relative positions of each course in terms of viewing and listening, and of ratings of television and radio.

Looking first at inter-faculty differences in undergraduate use of television programmes (Figures 5 and 12), the most notable feature is the high rating given to maths television by those who use the programmes. Although maths <u>viewing</u> figures were generally similar to those in other faculties (Figure 5), the programmes were more highly <u>rated</u> than any in Educational Studies and than all but those obtaining above average ratings in Arts, Social Sciences and Technology (Figure 12). Also, although in terms of viewing figures, Science outstripped all other faculties, by far the highest rating went to television in an Arts course: the programmes for A305 "History of Architecture and Design", which were used to provide analyses of buildings not easily accessible to students, were found very helpful by 71% of students. On the other hand, other Arts programmes which were equally heavily viewed as those on A305 - particularly the programmes on A302 the Novel course and those on A304 the Music course - had very much lower helpfulness ratings. Indeed, overall, there are quite marked disparities between viewing and rating in the Arts Faculty, indicating that many students must watch these programmes for sheer interest or enjoyment.

Figure 12

Television: Students making any use of programmes rating them very helpful : All undergraduates

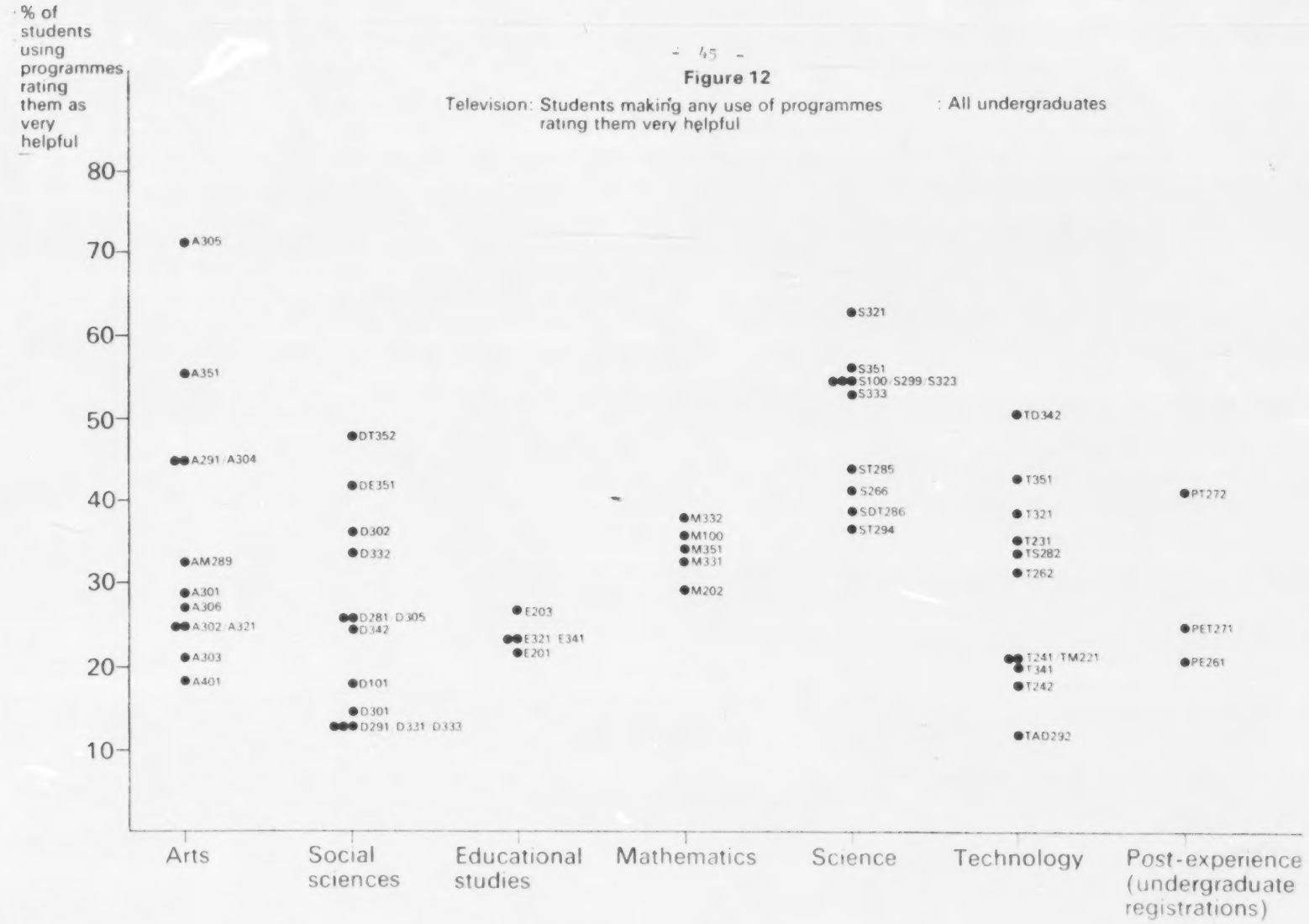
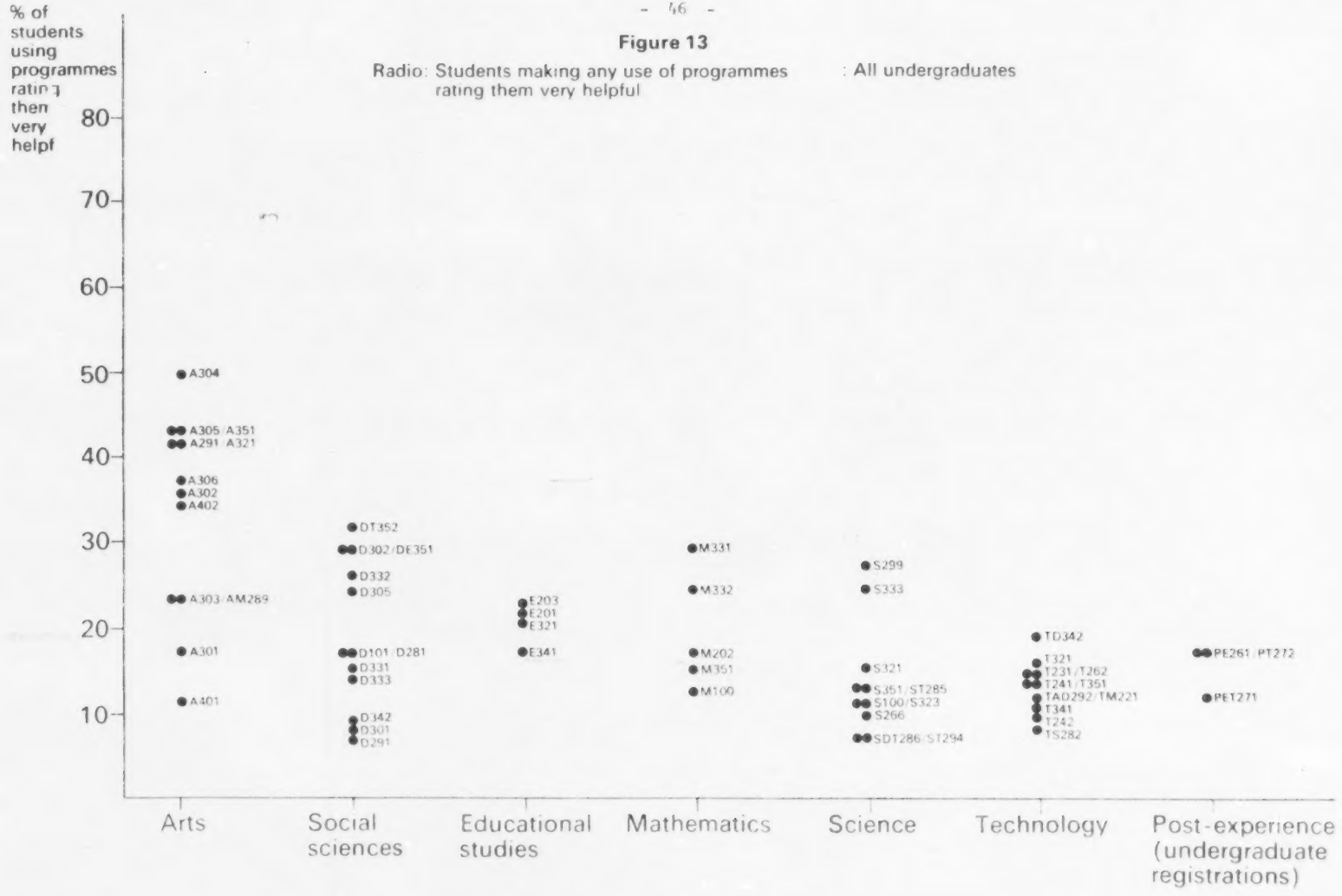


Figure 13

Radio: Students making any use of programmes rating them very helpful : All undergraduates



This was clearly not the case in other faculties, where in general the programmes with high viewing figures also had the highest ratings. A notable exception were the D101 programmes which although watched by more students than others in the Social Sciences Faculty, were given one of the lowest ratings. It is to be expected that students in their Foundation year would watch more than those in later years of study and indeed all three Foundation Courses in our sample had higher viewing figures than any other course in the three faculties concerned. However, the disjunction between viewing and rating was not striking for the Mathematics and Science Foundation Courses, as it was in Social Sciences.

Figures 7 and 13 (pp. 32 and 46) show a much greater consistency between radio listening and ratings of the programmes. It seems that radio programmes are less likely to be perceived as having any particularly appealing intrinsic qualities and are likely to be listened to only if they are judged to be helpful. Again, the position of Mathematics relative to that of other faculties improves somewhat in terms of the helpfulness ratings given to the programmes by those who actually used them. Science and Technology present a rather dismal picture, and in no case were the programmes on any Technology course found very helpful by more than a fifth of students.

Comparison of Figures 14 and 15 (pp. 48 and 49) showing the ratings of television and radio by post-experience students who used the programmes, with Figures 6 and 8 (pp. 30 and 33) giving viewing and listening figures should underline the point already made that the marked tendency of post-experience students to watch and listen to more programmes was not matched by a tendency to rate them more highly than undergraduates. Thus, it seems that the greater use made of the programmes by this group is an indication of student-related factors rather than a reflection of the qualities of the programmes themselves. For instance, post-experience students in general register for fewer courses in any one year and are therefore likely to be under less pressure; their motivation for study is likely to be rather different from that of undergraduates; they are very much more likely to be new to the OU system - to be in their first (and perhaps only) year of study; they are likely to come into less contact with other students and with part-time staff. Any or all of these factors may lead to their being more regular viewers and listeners than are undergraduates, although in the final assessment they really seem to find the programmes no more or less helpful than others.

In conclusion, it must be remembered that we have been discussing only the extreme "very helpful" rating given by students. We assume that this provides a reasonable indication of relative "highest" values which students place on various course components. To have included other ratings in the analysis might well have clouded the picture somewhat, since for instance the category "fairly helpful" is amenable to a wider attribution of meaning than the one on which we concentrated. For example, in our detailed evaluation studies of individual programmes we have found that while some students choose the "fairly helpful" category to signify a generally positive response to the material, others use it in a rather negative way to indicate some inadequacy in the material.[5] This complication does not arise with the "very helpful" category. On the other hand, it is also true that there is a tendency for questionnaire respondents to avoid the extremities of rating scales. However, in this study while students certainly did avoid the negative extreme, the same was not true for the positive end of the scale. Indeed, most students found the television and radio programmes of some value in their studies: as Table 12 (page 50) shows, over two-thirds of all students on the courses in our sample rated television as at least fairly helpful and just under half rated radio in this way.

Figure 14

Television: Post-experience students making any use of programmes rating them very helpful, showing comparative undergraduate ratings : All post-experience students

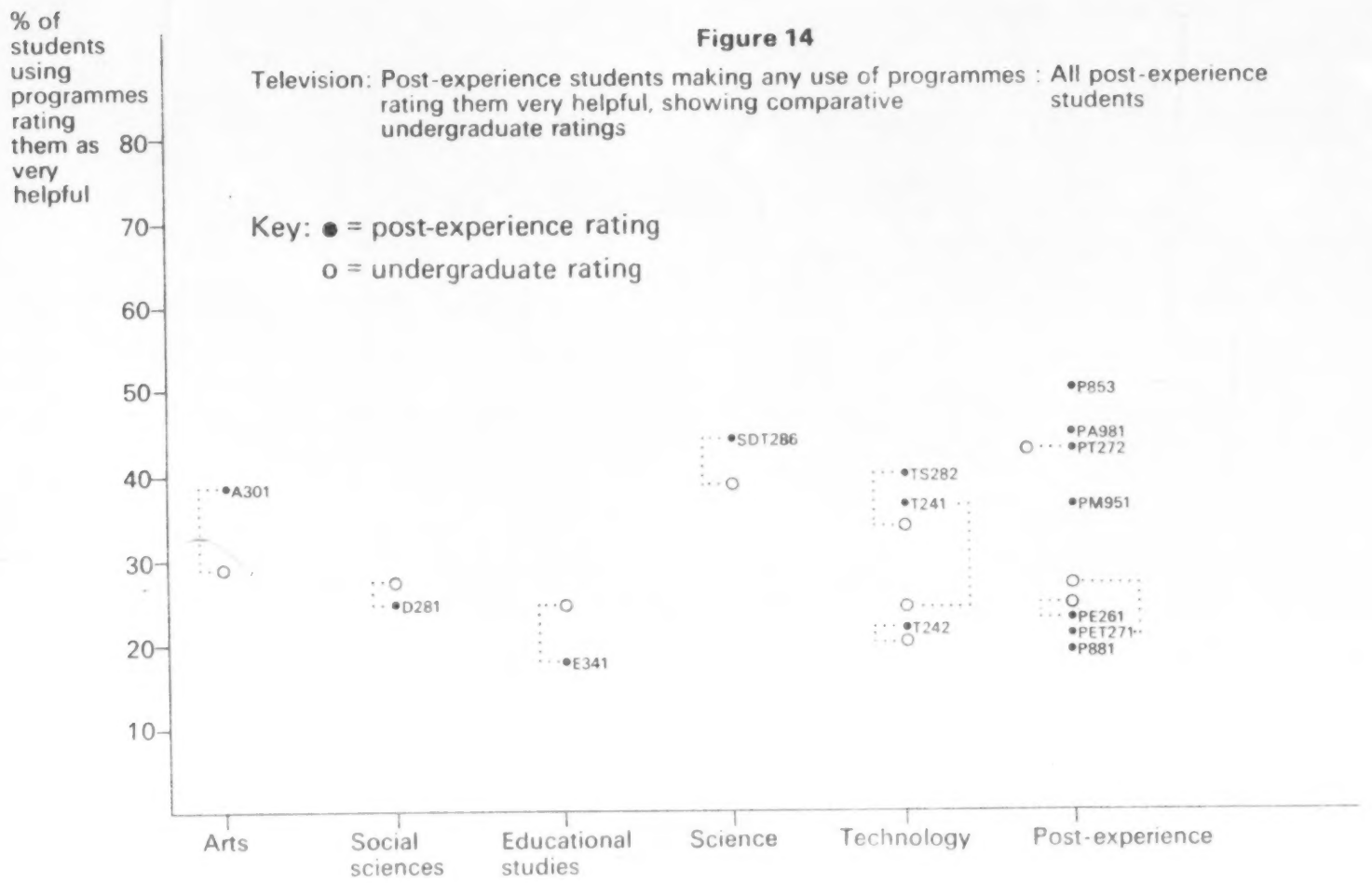


Figure 15

Radio: Post-experience students making any use of programmes rating them very helpful, showing comparative undergraduate ratings : All post-experience students

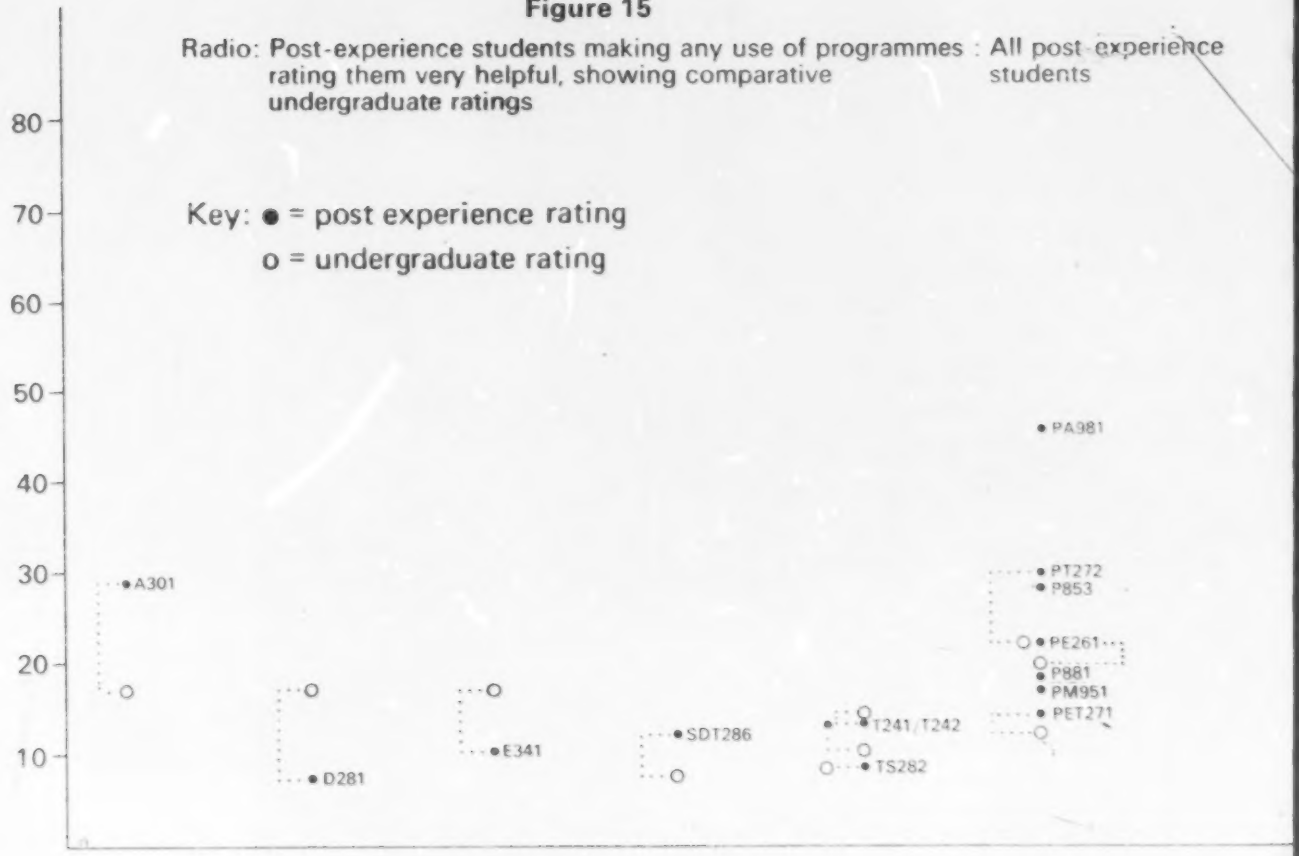


TABLE 12. Student Rating of Helpfulness of Television and Radio in Learning

TELEVISION	% of students				
	Very helpful	Fairly helpful	Not very helpful	Not at all helpful	Did not use
Arts	29	36	16	2	11
Social Sciences	20	42	21	4	7
Educational Studies	22	43	19	2	9
Mathematics	30	40	14	2	10
Science	48	37	8	-	3
Technology	28	40	15	3	9
P-E (undergrad. registrations)	24	38	19	3	10
All undergraduate registrations	29	40	16	2	8
Post-experience registrations	28	43	18	2	4
RADIO					
Arts	28	34	14	2	15
Social Sciences	16	33	24	5	16
Educational Studies	17	35	21	5	16
Mathematics	10	22	23	8	32
Science	10	31	27	7	20
Technology	9	30	23	7	26
P-E (undergrad. registrations)	12	33	22	6	22
All undergraduate registrations	15	32	22	6	20
Post-experience registrations	16	39	23	4	10

The Need for Repeat Broadcasts: Student Views

The pressure on available transmission time caused by an increasing number of courses, and its inevitable consequence - an increase in the proportion of courses whose programmes can only be transmitted once - have already been indicated. In deciding just which courses should lose their repeat transmissions it seemed appropriate to take account of the views of students themselves. Accordingly the following question was asked:

> Q.25. With the increase in the number of courses, transmission time is becoming scarce and it will be impossible in the future to transmit every programme twice. As this course stands now, how important do you think it is to have the television programmes on the course repeated? (Bearing in mind that other courses you are taking, or may take, might lose their repeats as a result.)
>
> Essential 1
> Very important 2
> Desirable 3
> Not necessary 4

A similar question was asked for radio. The intention was to clearly distinguish students who thought that it was "necessary" that the programmes should be repeated from those who believed that it would just be "a good idea". For this reason, a conventional four or five-point interval scale was not used, but a simple scale of measurement which allowed us to make a distinction between these two groups.

The results from these questions are given in full for each course in Appendix IX , and are summarised by Faculty in Table 13 (over). This table indicates that, overall, just over a quarter of students thought that repeat television broadcasts were necessary, just under a quarter thought they were not necessary and about a half thought it would be desirable, or a good idea, to have the programmes repeated. On the other hand, for radio only about a sixth thought repeats were necessary, a third thought they were not and just over two-fifths said they would be "desirable". In a sense these figures tell their own story, although only a very sketchy one. Even without looking at inter-faculty differences, the television/radio difference suggests a relationship between students' perception of the relative value of the two media in their studies and their estimation of the need for repeat transmissions in each medium. Faculty differences bear this out, with above average proportions stating the necessity of repeats for Science television (two-fifths) and for Arts radio programmes (a quarter).

Further information to fill out the story is provided by the selection of reasons made by students, from pre-coded lists, to explain why they thought repeats were or were not necessary. Table 14 (page 53) summarises the data from students across all courses who said that repeats were "essential" or "very important". The first point to note is that the most commonly given reason had nothing to do with any specific quality of the programmes themselves but reflected the general problem of being unable to rely on watching or hearing any single transmission. At the same time, although this was the most commonly cited reason across all Faculties, it was certainly related to a perception of the actual helpfulness of the programmes: for instance Arts students were twice as likely to give this reason in relation to radio programmes, while the reverse was true in relation to television. A further point is that students who said that repeats were necessary watched and listened to more programmes than students who did not: an average

TABLE 13. Students' Estimation of Need for Repeat Transmissions on Courses: by Faculty

TELEVISION	% of students			
	Essential	Very Important	Desirable	Not Necessary
Arts	9	15	44	26
Social Sciences	7	16	48	27
Educational Studies	9	15	51	22
Mathematics	10	17	46	25
Science	14	27	47	11
Technology	10	17	47	25
P-E (undergrad. registrations)	6	12	51	29
All undergraduate registrations	10	18	47	23
Post-experience registrations	8	15	53	22
RADIO				
Arts	7	16	44	31
Social Sciences	5	13	46	34
Educational Studies	7	13	45	32
Mathematics	4	7	33	52
Science	4	9	44	41
Technology	4	8	41	44
P-E (undergrad. registrations)	5	5	45	42
All undergraduate registrations	5	11	43	33
Post-experience registrations	6	11	49	32

TABLE 14 Reasons Repeat Broadcasts Thought Essential or Very Important: by Faculty

TELEVISION

% of students

	Arts	Social Science	Ed. Studies	Math-ematics	Science	Tech-nology	P-E (undergrad. registrations)	All undergrad. students	Average programmes seen/heard	All P-E students	Average programmes seen/heard
Material necessary for assignments	8	7	11	6	17	9	5	9	77%	5	85%
Appreciation/understanding diminished without two viewings	8	4	6	9	13	7	4	7	78%	6	78%
Closely integrated with other course material	9	6	8	8	16	11	5	9	80%	4	85%
Can't rely on viewing any single transmission	13	15	16	16	24	16	12	16	73%	13	76%
Material particularly interesting	9	4	4	5	10	6	4	6	81%	5	83%
Missed many/all because of present transmission times	2	2	2	2	2	2	1	2	53%	2	61%
All saying repeats essential/very important	24	23	24	27	41	27	18	28	74%	23	75%
RADIO											
Material necessary for assignments	9	6	10	3	5	4	4	6	68%	4	70%
Appreciation/understanding diminished without two hearings	8	4	6	3	4	3	3	5	67%	5	66%
Closely integrated with other course material	9	6	7	3	5	4	4	6	71%	4	70%
Can't rely on hearing any single transmission	13	11	12	6	6	8	6	10	62%	9	62%
Material particularly interesting	8	4	3	1	3	2	2	4	71%	3	75%
Missed many/all because of present transmissions	3	2	2	1	1	1	1	2	43%	2	38%
All saying repeats essential/very important	23	18	20	11	13	12	10	16	63%	17	64%

of 74% of television and 63% of radio programmes, compared with 62% and 44% respectively in the other group. This is related to another point, which emerges from Table 15 (page 55). Many of those who did not see the necessity for repeats had made little or no use of the programmes: a sixth had seen little or no television and a quarter heard few or no radio programmes. Clearly, since they had managed without television and/or radio they were unlikely to say that programmes needed two transmissions. Another feature of Table 15 is the proportion of students not asking for repeats because they found adequate summaries of the programmes in the broadcast notes. Since they viewed and listened to rather fewer programmes than average, it seems likely that at least some of these students were using the notes not just as a supplement and back-up to the programmes, but rather as a substitute for viewing and listening.

A final point of note is that the most commonly given reason among this group of students was that they had generally watched or listened to only one (though not necessarily the same one) of the existing two transmissions. This raises the question of advisability of putting too much weight on overall student estimates of the need for repeats at a time when (in 1976) transmission times - at least for television programmes - still allowed most students to exercise an element of choice in their viewing. This means that even when students find the programmes helpful and see them as important, they may not have thought very seriously about the difficulties which would be posed by single or poor transmission times, because existing arrangements are reasonably good. The point is well illustrated by the different responses to the question of necessity for repeats by students on two Social Science courses - DE351 and DT352. As we have already seen, these courses had very similar viewing figures and ratings for helpfulness. Moreover, the television component was used in a roughly similar way in both courses, and in each case was linked to course assessment. Yet, while 41% of DT352 students said that repeats were essential or very important for the television programmes on the course, only 27% of students on DE351 said so for the programmes on that course. This difference can be explained by looking at the 1976 television transmission times for the two courses: DE351 had two "prime" slots, being transmitted at 10.10 on Sunday and repeated at the same time the following Sunday; DT352, on the other hand, went out at 09.20 on Saturday and was repeated at 17.00 the following Tuesday. The "repeat" on DT352 must have been an almost impossible time for many students (indeed only 20% made any use of it), thus reducing freedom of choice: DT352 students were twice as likely as those on DE351 to choose the category "can't rely on being able to view any single transmission" when giving reasons for the necessity for repeats.

It seems, then, that students while in general relating the necessity for repeat broadcasts to the value which they attach to programmes on specific courses will nevertheless be influenced by the existing transmission times for those programmes. As Figures 16 and 17 (pp. 57 and 58) show, this can have the effect of increasing their assessment of the need for repeats on relatively low ranking courses if the repeat broadcast has already been sacrificed or if transmission times are particularly poor; and, as has been shown above, the reverse is also true. While the general picture presented by Figures 16 and 17 is very similar indeed to that thrown up by Figures 12 and 13 (pp. 45 and 46), which showed the percentages of students rating various course programmes as "very helpful" - highly rated programmes are typically those said to need repeats - there are one or two points of note. In the case of television (Fig. 16), apart from the DE351/DT352 difference already mentioned, the position of M202 "Pure Mathematics" is worth noting.

TABLE 15. Reasons Repeat Broadcasts Thought Desirable or Not Necessary: by Faculty

TELEVISION	% of students										
	Arts	Social Science	Ed. Studies	Math-ematics	Science	Tech-nology	P-E (undergrad. registrations)	All undergrad. students	Average programmes seen/heard	All P-E students	Average programmes seen/heard
Material not necessary for assignments	16	15	9	13	6	14	16	13	56%	15	61%
Material not central to course content	14	15	11	6	5	8	10	11	58%	12	63%
Generally saw only one of two existing transmissions	31	33	33	30	32	32	35	32	71%	33	72%
Content easy to follow	14	17	16	14	20	15	27	17	70%	22	70%
Only one transmission now and generally saw it	2	1	1	2	1	1	1	1	75%	1	83%
Record sound myself	10	7	10	4	5	8	8	7	77%	10	77%
Broadcast notes provide adequate summary	13	22	28	21	22	20	25	21	65%	22	68%
Managed without seeing many/any programmes	19	18	16	19	7	18	19	16	30%	13	36%
All saying repeats/desirable/not necessary	70	75	73	71	58	72	80	70	62%	75	66%
RADIO											
Material not necessary for assignments	13	16	12	19	20	18	19	16	36%	16	51%
Material not central to course content	11	15	12	13	21	14	13	15	42%	12	56%
Generally heard only one of two existing transmissions	22	30	30	21	27	22	28	26	59%	30	64%
Content easy to follow	8	9	8	7	11	8	13	9	57%	16	63%
Only one transmission now and generally heard it	8	2	1	4	1	4	2	3	72%	3	82%
Record programme myself	20	17	23	17	17	21	22	19	71%	24	73%
Broadcast notes provide adequate summary	18	21	29	17	26	24	27	23	44%	23	55%
Managed without hearing many/any programmes	23	27	23	35	29	29	27	27	18%	18	25%
All saying repeats desirable/not necessary	75	80	78	85	85	85	87	76	44%	81	55%

Although the lowest-ranked maths course, in terms of helpfulness, it comes second only to the Foundation Course as a course needing repeat television programmes: M202 was the one course which had already lost its television repeats in 1976. Also, TD342 "Systems Failure", while certainly highest rated of the Technology courses (Figure 12), shoots right away from all other courses in the Faculty on the "repeats" issue, due possibly to a combination of factors. The programmes are directly assessed, and the repeat transmission in 1976 was at 17.00, Thursday - a particularly poor time for Technology students, of whom only about 20% would, on average, be at home then.

Turning to radio (Fig. 17), a similar effect can be seen for TD342 here. Although, in terms of helpfulness, rated not much more highly than any other Technology course, TD342 stands apart in the extent to which students judged the need for radio repeats on the course. Again, the programmes are directly assessed, and there were no repeats in 1976. (These programmes are now made available to students on cassette, as part of the home experiment kit.) Other courses whose position on the repeats issue was higher than would have been expected given their helpfulness rating, were T351, ST294 and ST285: all had already lost their repeat transmissions in 1976.

It would be unwise, then, to accept the overall rather low student estimates of the need for repeat broadcasts as a statement that the withdrawal of repeats is causing no problems for students. The general lack of concern is associated in part with a concomitant lack of conviction on the part of many students that broadcasts play a crucial and entirely integral role in some courses. For instance, one of the most common reasons given for not needing repeats (Table 15) was that the programme material was not central to the course content: indeed, one fifth of Science students made this point in relation to radio. It is also related to the fact that at least in 1976, transmission times - although often incomvenient - were still such that it was possible for most students to see most of the programmes, if they wanted to. However, the data have shown clearly that the more highly students value programmes the more they see the need for repeat transmissions. There is, for instance, no apparent reason why Science students should be any less able to rely on seeing any single transmission than, say, Technology students; yet they were 50% more likely to give this as a reason for the need for repeats than students in any other Faculty. The explanation could be that the more students regard programmes as important in their studies, the more they become aware of the limitations imposed by single transmissions. It will be argued that just as attitudes are modified by changing circumstances so too is behaviour, and that although students may find particular transmission times inconvenient they will nevertheless use them, if the programmes are worthwhile. There is certainly a lot of truth in this: students in substantial numbers are already viewing and listening to programmes at times which they had previously said would be unacceptable. However, there is a limit - an actual physical limit - to the extent to which behaviour can be modified. Moreover, there is already some evidence that the loss of repeats is depressing listening figures on certain courses. This, and other factors affecting viewing and listening, will be discussed in the next section.

Figure 16

Television: Students saying repeats essential or very important : All students

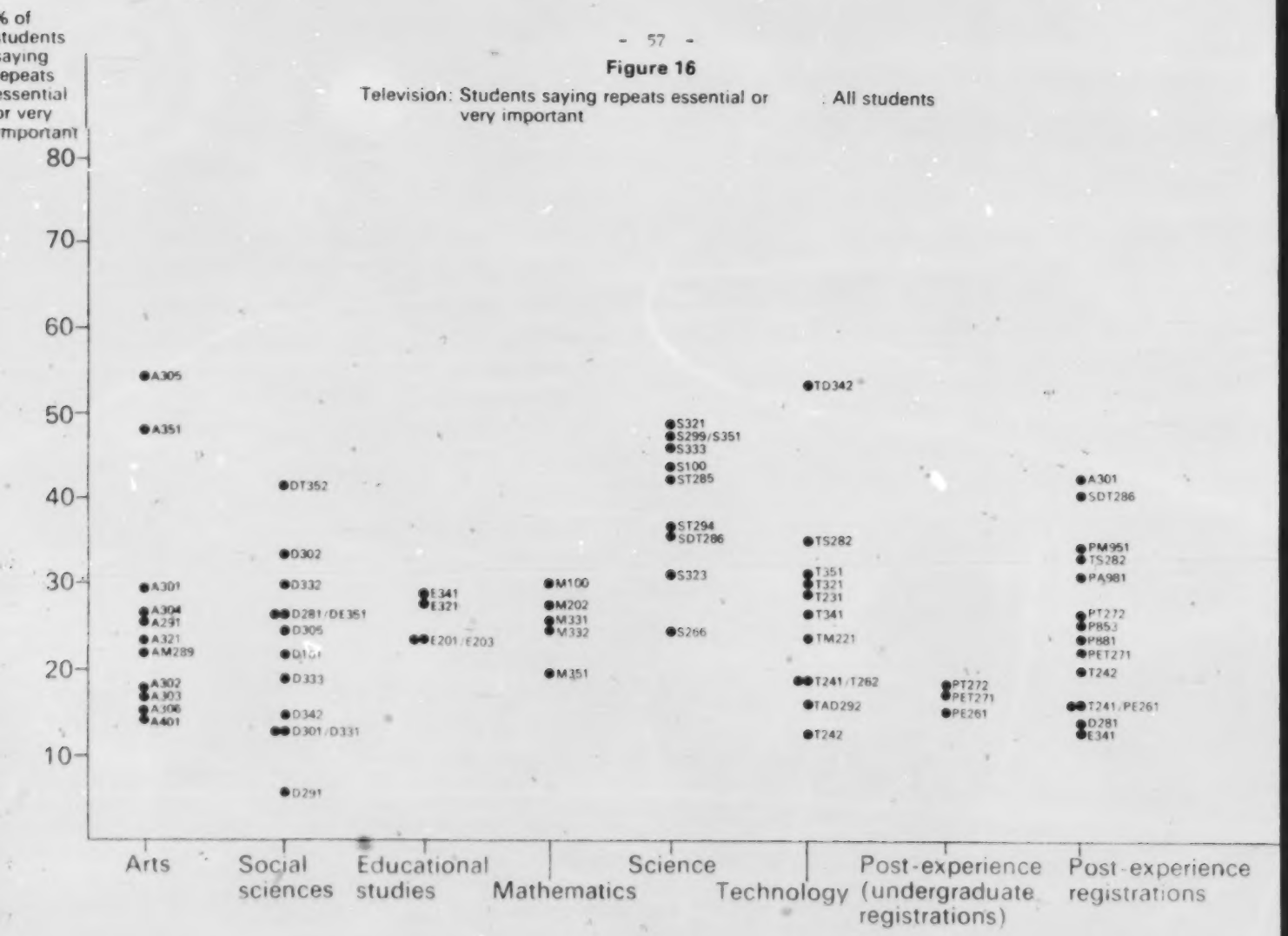
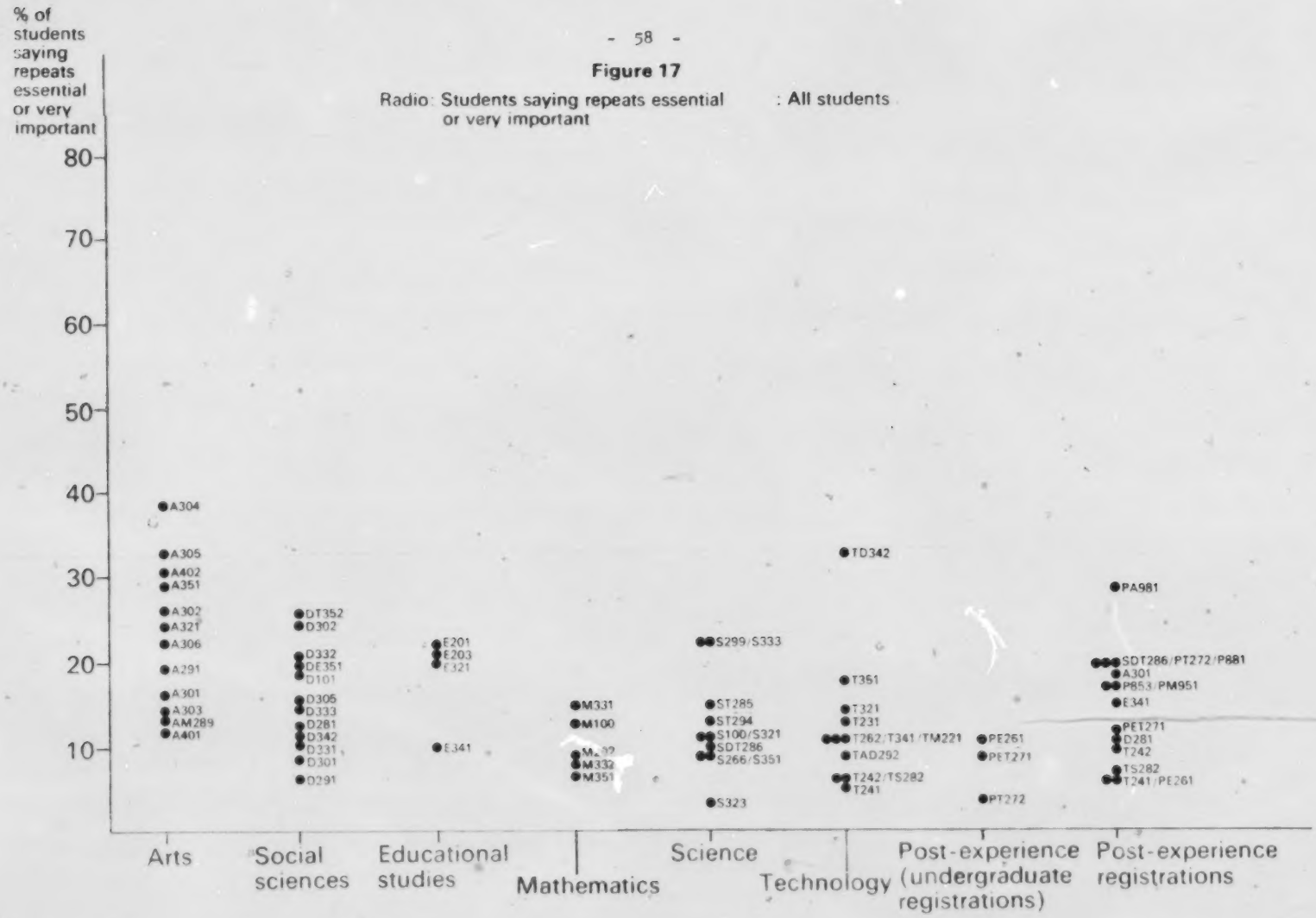


Figure 17

Radio: Students saying repeats essential or very important : All students



4. FACTORS AFFECTING USE OF BROADCASTING

Single Transmissions

In 1976, a total of 23 courses had no repeat radio broadcasts. Of these, 22 were undergraduate courses and 14 had been included in the 1974 survey, when they did have repeat transmissions. This allows us to examine the effect on listening figures of the loss of the second broadcast. As Table 16 (page 60) shows, the average number of programmes heard has indeed decreased across all these courses, though the extent of the decrease varies considerably from course to course. In the first place, although the overall decline in programmes heard at least once is just 6%, the number of programmes heard only on transmission has fallen by 10% across all courses. The overall decline has to some extent been off-set by an increase in the number of programmes heard only on a recording of some kind. The second point of note is that it is generally the courses with highest listening figures in 1974 which in 1976 had the biggest decreases in programmes heard on transmission and also the biggest increases in programmes heard on recording only. A304 the Music course, for instance, had an average of 73% of programmes heard in 1974, and 65% in 1976. Yet the programmes heard on transmission fell quite dramatically (from 66% to 47% in 1976), while programmes heard only on recording more than doubled (from 7% to a striking 18% in 1976). Finally, it can be seen that in no case were more than half the programmes heard on transmission, the highest figures being 48% for TD342 where the programmes were assessed. Because of the way in which the average listening figure is calculated*, we can also say that on no course did more than 48% of students, on average, listen to any single transmission.

*$\frac{\text{Sum of all programmes heard}}{\text{No. of programmes x no. of students}} \times 100$

Two criteria were used in deciding which courses should lose their repeats in 1976: listening figures derived from the 1974 survey, and student numbers. For this reason we have been able to see the effect of single transmissions on courses with initially high listening figures, for example, A304, DT352 and TD342 (which lost their repeats because of low student numbers). In the main, however, 1976 courses without repeats had below average listening figures to begin with. It is therefore not surprising that on most of these courses, listening did not decline as sharply as was the case with courses whose programmes were rated more highly. Perhaps, then, it is even more note-worthy that - even taking into account the increase in the number of programmes heard only on recording - listening did in fact decrease by at least 7% in every case except T242 (which had one of the very lowest listening figures in 1974) and D342 (which had an even lower 1974 listening average than T242, and where the number of programmes heard on recording doubled in 1976). It was noticeable, moreover, that while the percentage of students giving the lack of repeat transmissions as a reason for missing programmes was 16% across all courses without repeats, this did increase considerably on certain courses where the programmes were found particularly helpful: to 24% on TD 342, 30% on A302 and reaching 40% on A304.

The implications of these results are important, for as the proportion of courses without repeats increases so must more and more courses whose programmes students do find relatively helpful be included in those with single transmissions. As a consequence, more and more students will

TABLE 16. Listening Figures for Courses Without Repeat Transmissions Showing Comparative 1974 Data

Courses	1976 Programmes heard at least once	1976 Heard on recording only	1976 Heard on transmission only	1974 Programmes heard at least once	1974 Heard on recording only	1974 Heard on transmission only
	%	%	%	%	%	%
A291	52	9	43	55	5	50
A301	46	8	38	57	6	51
A302	59	12	47	61	8	53
A303	42	8	34	50	4	46
A304	65	18	47	73	7	66
A401	36	6	30	48	3	45
Mean	50	10	40	57	5	52
D301	45	6	39	54	7	47
D331	35	3	32	47	4	43
D342	42	9	33	37	4	33
DT352	50	9	41	61	8	53
Mean	43	7	36	50	6	44
M331	38	4	34	-	-	-
M332	40	5	35	-	-	-
M351	34	7	27	-	-	-
Mean	37	5	32			
S321	49	12	37	50	6	44
S323	43	9	32	46	6	40
ST285	36	5	31	44	6	38
ST294	40	8	32	-	-	-
Mean	42	8	33	47	6	41
T242	36	3	33	40	3	37
T262	52	6	46	-	-	-
T341	43	5	38	-	-	-
T351	40	8	32	-	-	-
TD342	55	7	48	-	-	-
Mean	45	6	39			

be disadvantaged and the general picture regarding use of radio will become even more gloomy as even those courses which now have relatively high listening figures inevitably lose more of their listeners. For although student behaviour may change to some extent - and the increase in the number of recordings being listened to is an example - there is a limit to which this can be expected. For instance, the 1974 data showed that in no case did more than 48% of students use any single radio transmission slot: this was still the case in 1976 even for courses where radio played an important, assessable role and even though the single transmission slots in that year were all "prime" times.

The problem of single transmissions is alleviated in the case of radio by the facility of automatic recording which is possible for many students; moreover, since 1977 an audio library service has been available to all students making it possible for any programme missed on transmission to be heard on cassette. These alternatives, however, do not exist for television. In 1976 only one course - M202 - did not have repeat television broadcasts. Since this had one of the lowest viewing figures of the courses in the 1974 survey, and since it had a "prime" transmission slot in 1976, it is not surprising that the 1976 figure has not been affected by the loss of repeat, although 37% of M202 students gave this as a reason for missing programmes. Given what we now know about the effect of single transmissions on listening figures, we must expect an even more pronounced effect on viewing over the next few years as the proportion of courses without repeats increases.

Particular Transmission Combinations

The normal transmission pattern for both television and radio programmes means that the original and repeat broadcasts of any one programme go out to students in the same week. Earlier research[6] had shown that very many students fall up to a month behind the recommended study dates and are therefore inadequately prepared for the broadcasts. This is more of a problem with some subject matters than with others, but is particularly damaging to the effectiveness of mathematics programmes which generally depend for even minimal comprehension on prior mastery of specific mathematical topics, techniques or concepts. In an attempt to combat this problem, the repeat broadcasts of M100 television programmes have been "staggered" since 1975. This means that if the first broadcast is in week 1, the repeat is transmitted in week 4, the idea being that students who have fallen behind schedule will still be able to benefit from the programmes. We were interested to see what effect, if any, such an arrangement would have on student use of the broadcasts. Table 17 (page 62) summarises the viewing figures for each transmission slot in 1976 and in 1974 (when the "normal" transmission pattern still held). Clearly, viewing behaviour was remarkably similar in each year with about a sixth of students watching both transmissions. This is perhaps a little surprising, remembering that in 1976 students watching the second transmissions as well as the first would have seen three other programmes in the meantime. They nevertheless appeared to find it worthwhile to watch the 'staggered' repeat. A further point is that in 1976 the number of students watching the repeat transmission may have been somewhat depressed because, particularly later in the year, the time and day of the repeat broadcast varied considerably: although the normal transmission time for the repeat was 18.15 on Monday, 11 of the 36 programmes had repeat

TABLE 17. Use of M100 Transmission Slots in 1974 and 1976

	1st transmission only	2nd transmission only	Both transmissions	Recording only	Viewed at least once
	%	%	%	%	%
1974: 'normal'	33 18.40 Mon	14 11.50 Sun	16	-	63
1976: 'staggered'	36 07.40 Sat	12 18.15 Mon	15	3	66

broadcasts at other times (in fact, nine different transmission times were used for the repeat transmissions).

Although the percentage of students watching the M100 television programmes did not change between the two years, the percentage rating them as "very helpful" increased from 25% in 1974 to 33% in 1976, indicating that the policy has increased the usefulness of the programmes to those students who watched them. Moreover, if we look at just which students found the programmes most helpful, there is some indication that, compared with other mathematics courses, it was the weaker students in particular whom found the M100 television helpful. Although no comparative 1974 data are available, the information collected in 1976 is quite striking.

TABLE 18. Mathematics Students Making Any Use of Television Programmes Rating Them "Very Helpful": by Examination Result

% of students gaining different grades, rating "very helpful"

	M100	M202	M331	M332	M351
Grade A or B	17	22	16	34	29
Grade C or D	34	37	38	48	52
Failed/Dropped-Out	50	28	31	33	30

It is clear that while, on all courses other than M100, rather less than a third of students who made any use of television and who failed the final examination or dropped out before taking it rated the programmes as very helpful, half of such M100 students found the television very helpful. It is these students who have been found in the past to be much more likely to fall behind in their studies, and it is notable that in M100 more of this group than any other found the programmes very helpful. Without comparative 1974 data, it is impossible to say conclusively that the policy of staggered repeats has been responsible for this difference between M100 and other mathematics courses (it might, for instance, always have been there). However, the overall percentage rating M100 television as "very helpful" did increase from 25% to 33% between 1974 and 1976; the rating for M202 programmes - the only other maths course covered by both surveys - was exactly the same in 1974 and 1976. Moreover, the ratings of M100 students who did pass the course examination were very similar to those of students on M202 and M331, indicating that M100 television was not abnormally less helpful to "better" M100 students. Taking account of all these points, therefore, it seems reasonable to conclude that the staggering of repeats on M100 has, as intended, increased the usefulness of television to weaker students.

In 1976 all courses with repeat radio or television broadcasts except the Foundation Courses and DE351 had one of their transmissions at a "poor" time.

In most cases, this meant an early morning transmission (before 8 a.m., either on a weekday or at weekends), though some repeat television transmissions were in the very early evening (beginning at 17.00 or 17.25 on weekdays) and a few repeat radio transmissions were late at night (between midnight and 1 a.m.). In the case of early morning transmissions, these were sometimes the first broadcast and sometimes the repeat. (Full transmission details for 1976 are given in Appendix IV.) It was found in 1974 that no particular combination of transmission times appeared to significantly depress overall viewing and listening figures on any course, and that as long as there were repeats any individual time appeared to be as good as any other. This was still the case in 1976. Whether the "poor" transmission is the first broadcast or the repeat makes no difference to the overall viewing and listening figures, although it does affect the distribution of viewers and listeners between the two transmission slots. Table 19 (page 64) summarises the television data for all courses by faculty. In all cases, the viewing figure for the "poor" first transmission is rather lower than for first transmissions at good or prime times. However, this is compensated for by a larger audience for the repeat transmission. So it seems that when the "poor" transmission is first, about 40% of students can be expected to be watching and when it is the repeat, about a quarter will be watching. Full details of the percentage of programmes watched at each transmission time, for each course, are given in Appendix X. It will be seen that there are considerable variations between courses, although the overall pattern holds as described. In general, not more than an eighth of students watched both transmissions though this increased to a fifth, on average, for science courses; and on DE351 just over a fifth watched both broadcasts, a proportion made easier by the untypically favourable transmission times for the course in 1976. There was a clear positive relationship, overall, between high helpfulness ratings and above average percentages watching twice. There were no significant

differences in viewing figures between the various "poor" transmission slots: so it made no difference whether this was an early morning (6.40 to 8.05) or a very early evening (17.00 to 17.50) slot. More important was whether the poor transmission time came first or second, but most important of all was the use made of television on the course and its perceived helpfulness by students. Courses sharing identical transmission times - for instance, A321 and A351, T242 and T262 - had widely different viewing figures. Overall, however, as in 1974 on no courses did more than two-thirds of students, on average, watch any single transmission; while across all courses the average proportion watching first transmissions was just under half, with just over a quarter on average watching repeat transmissions.

With radio, a very similar pattern - in terms of use of particular transmission slots - emerged, as Table 20 (page 65) shows. Here, although the overall pattern is similar to that for television, the differences are much more slight. In general, not more than about a third of students, on average, listened to any single transmission, though this rose to nearly a half on specific courses. The percentage of students listening to both transmissions was very low indeed, never reaching more than 8%. On the other hand, an average of 20% of students across all courses recorded the programmes, though this rose to about a third on certain courses - those on which radio was found most helpful - and to 38% on A304. Although overall listening figures were not affected, the very early morning slots (06.00 and 06.20) were markedly less used than those between 06.40 and 08.00: even when these were first transmissions, they were used by

TABLE 19. Comparative Viewing Figures for Courses with "Poor" Transmission as First Broadcast or Repeat: by Faculty

% of programmes viewed on average*

	Poor Transmission First				Poor Transmission Repeat			
	Watched 1st transmission	Watched 2nd transmission	Watched both	Recording only	Watched 1st transmission	Watched 2nd transmission	Watched both	Recording only
Arts	45	35	13	3	50	17	9	4
Social Sciences	37	25	9	1	48	21	7	-
Educational Studies	47	31	15	1	51	26	13	2
Mathematics	44	30	14	2	53	25	16	-
Science	48	46	21	7	56	34	17	5
Technology	41	31	13	4	54	21	10	1
Mean	44	33	14	3	52	24	12	2

*Figures for each transmission include programmes watched twice. So the Arts first transmission of 45% includes 13% of programmes viewed twice.

TABLE 20. Comparative Listening Figures for Courses with "Poor" Transmission as First Broadcast or Repeat: by Faculty

% of programmes heard on average*

	Poor Transmission First				Poor Transmission Repeat			
	Heard 1st transmission	Heard 2nd transmission	Heard both	Recording only	Heard 1st transmission	Heard 2nd transmission	Heard both	Recording only
Arts	35	15	6	9	41	11	3	9
Social Sciences	26	19	5	7	32	14	5	7
Educational Studies	26	24	4	8	34	12	4	11
Mathematics	28	10	3	5	23	6	3	6
Science	32	14	5	8	23	24	3	9
Technology	25	12	2	9	33	9	1	8
Mean	29	16	4	7	31	13	3	8

*Figures for each transmission include programmes heard twice.

only 21% of students on average (compared with 29% for other early morning first transmissions). However these courses had above average audiences for the repeat transmissions (22% as opposed to 15% on courses where the repeat followed a later - 06.40 to 08.00 - morning transmission). Two courses - A321 and D332 - had both first and repeat broadcasts in the early morning (at weekends); although their listening figures were not below average, the proportion of students giving the inconvenience of early morning transmissions as a reason for missing programmes was above average: 27% and 30%, compared with 16% across all courses with early morning transmissions.

Other Programme-Related Factors

The frequency of transmissions made little difference to viewing and listening figures. Courses with fortnightly transmissions had not significantly higher figures than courses with three-weekly or monthly transmissions.

One factor which did make an impression on listening figures was the difficulty which some students report in using radio in studying. Given a pre-coded list from which to select reasons for missing television and radio, an eighth of students overall selected the option "I find radio a particularly difficult medium to use in studying." (Full details of students' reasons are given, by Faculty, in Appendix XI.) Only 2% chose an equivalent option for television. In the case of radio, students taking mathematics courses were more likely to report difficulty - 18% overall, with 29% of students on M202 giving this as a reason. Why should maths students, more than others, have difficulty with radio? The factor may be associated with a prevalent use of radio in the Faculty and with the finding noted earlier that the use of radiovision is not always successful in increasing listening and raising students' perceptions of helpfulness. Many courses in the Mathematics Faculty use a form of radiovision which involves working through examples of problems. Clearly, if the problem is found particularly difficult or the pace of the programme just slightly too fast students will be in trouble. Timing is not so crucial in cases like A305 or A351 where the visuals are being used to illustrate an argument or to provide a vehicle for visual analysis. The importance of timing, however, in a case like TM221 - where radiovision was not so successful - must have been paramount: if students are being guided through mock TMAs or specimen exam papers, it is essential that they keep step with the commentary.

A further factor depressing listening figures on some courses was the "hang-over" effect from students' experiences of radio in previous courses. Although only 6% of students overall said that they had not listened to programmes on the sampled course because programmes on previous courses had been not worth listening to, this rose to an average of 12% across all Mathematics courses (excluding M100) and to a similar percentage across all Technology courses. In Science, (excluding S100) the overall percentage was 10%, reaching 14% on S323 and ST294. This, tied to the fact that 9% of S100 students and 14% of those on M100 said that they did not listen because the programmes on those courses were not worth listening to, illustrates the importance of capturing the student audience right at the beginning of their studies. Remembering that a quarter of students in Science and Technology, and a third in Mathematics made no use of radio on the courses in our sample, it seems likely that a sizeable proportion of the potential radio audience is irretrievable. On the other hand, given a chance, radio

can be very useful to students: on M331, for example, where 36% made no use of it, radio was found very helpful by almost a third of those who did use it, equalling the proportion finding television very helpful, although only 11% made no use of television.

By far the most important factor affecting both viewing and listening, of course, is students' perception of the helpfulness of the programmes. However, this is not always or necessarily the case: in the Arts Faculty, television programmes rated relatively low on helpfulness had high viewing figures. Moreover, although broadcasts directly linked to assessment generally had above average ratings and viewing/listening figures, again this was not necessarily so: E201, for example, some of whose programmes were linked to assignment options, was rated no higher than other courses in the Educational Studies Faculty. It is worth noting, too, that assessment does not - cannot - result in anything like a 100% use of broadcasting. Even on TD342, where both television and radio had compulsory assignment questions, only 69% of the television and 55% of the radio programmes were seen and heard, on average. The non-assessed programmes for other Technology courses - notably T262 and T321 - had very similar viewing and listening figures to those of TD342. The same sort of pattern was true of other faculties. It seems clear that the main thing which will induce students to watch and listen is an obvious relevance of the broadcasts to the other course material and to the general course themes and aims: hence, although not directly assessed, above average use was made of programmes on such courses as A304, A351, A305, D332, D302, D305, T262, T321, T351, PT272 and most of the Science courses.

In general, few students (4% for television, 5% for radio) chose the option from the pre-coded list which allowed them to say that they had not watched or listened to the programmes because they were not worth it on the courses in question. However, particularly low-rated courses did show up here: M100 and S100 radio have already been mentioned; on D291 9% gave this reason for missing television and 13% gave it for not listening to the radio programmes; on D331 9% gave it for television; on E341 11% gave it for radio. Outstripping them all by far, however, was TAD292 where a spectacular 29% of students said that neither the television nor the radio programmes were worth using.

Drop-Out and Examination Result

In 1976, students throughout the University as a whole took the end-of-course examinations for 76% of the finally registered student-courses in our sample; among our undergraduate respondents the equivalent percentage was 81%. On the post-experience side, students either sat the final examinations or were awarded Letters of Course Completion for 67% of the finally registered student-courses; among our respondents the percentage was 76%. The first question to be answered, therefore, is whether the overall viewing and listening figures have been unduly biased by the slight under-representation of drop-outs among the respondents. Table 21 (page 68) shows the effect on viewing and listening figures of adjusting the data to take account of non-response, starting from the assumption that non-responding drop-outs and non-drop-outs watched and listened in the same proportions as those who returned the questionnaire. Because of the small overall numbers of non-respondents, the effect of the adjustment is negligible even in the case of post-experience students, where the rather lower overall response rate is off-set by a greater similarity in viewing and listening between drop-outs and non-drop-outs. So we can be confident that the overall figures, as a representation of the average number of programmes seen and heard by all finally registered students in 1976,

TABLE 21. Viewing and Listening Figures Adjusted for Non-Response: All Courses

% of programmes seen/heard on average

		Television		Radio	
		By Respondents	Adjusted for Non-response	By Respondents	Adjusted for Non-response
Undergraduates:	Drop-outs	41		25	
	Non-drop-outs	70		51	
	All	65	64	47	46
Post-experience:	Drop-outs	50		39	
	Non-drop-outs	72		61	
	All	67	65	56	54

have not been distorted. Even between courses, there was remarkable consistency in the proportions of drop-outs and non drop-outs who responded. In only four cases were non drop-outs over-represented by as much as 10%, and there was no evidence of the viewing or listening figures being significantly depressed or inflated by disproportionate numbers of drop-outs responding.

On the other hand, the actual proportions of students dropping out between final registration and end-of-course examination varied enormously from course to course. Of the undergraduate courses in the sample, the percentage ranged from 6% on A301 to 52% on E341, while among post-experience registrations the range was from 20% on PT272 to 40% on E341. Since the average use of both television and radio was, naturally, lower among students who did not complete the course, it follows that viewing and listening figures for any individual course are influenced by the proportion of students who dropped out on that course. Courses with above-average drop-out rate would tend to have below average use of broadcasting, irrespective of students' perception of the value of television or radio on that course. Table 22 (page 69) summarises

the average viewing and listening figures for all students and for non drop-outs only in each faculty. Taking overall faculty figures, then, there is a fairly uniform increase in the number of programmes seen and heard if drop-outs are excluded, although the increase in Arts is rather lower than average because of the below-average proportions of students dropping out from the Arts courses in our sample. Broadly speaking, however, the relative positions of the different faculties remain much the same. This can be confirmed by comparison of Figures 18 and 19 (pp. 70 and 71) showing non-drop-out viewing figures, with Figures 5 and 6 (pp. 29 and 30). It is clear that the position of all faculties has improved somewhat, though their relative positions remain basically unchanged. However, within faculties the position of individual courses has altered depending on the drop-out rate. Thus, for instance, Arts courses with particularly low drop-out - A301 and A302 - drop down the scale in relation to courses with higher drop-out, such as A351 and A291. Similarly, courses with above-average drop-out - say, TD342, T351 and T231 in Technology - tend to improve their positions vis a vis other courses. Courses whose viewing figures increased most when drop-outs were excluded - E341, ST285, T231 - tended to be those with the highest drop-out rates. However, this was by no means always so: for instance, in every case except Educational Studies, the course with the highest drop-out in each Faculty -

TABLE 22. Average Number of Programmes Seen and Heard by All Students and by Non Drop-Outs Only: by Faculty

% of students who watched/listened

	Television		Radio	
	All students	Non Drop-Outs Only	All students	Non Drop-Outs only
Arts	62	66	53	57
Social Sciences	63	69	49	54
Educational Studies	60	68	48	55
Mathematics	61	69	36	42
Science	78	85	47	51
Technology	59	65	41	47
P-E (undergrad. registrations)	55	60	42	46
All undergraduates	65	71	47	52
All Post-Experience registrations	67	72	56	60

Figure 18

Television: Viewing figures for sampled courses : Non drop-out undergraduates only

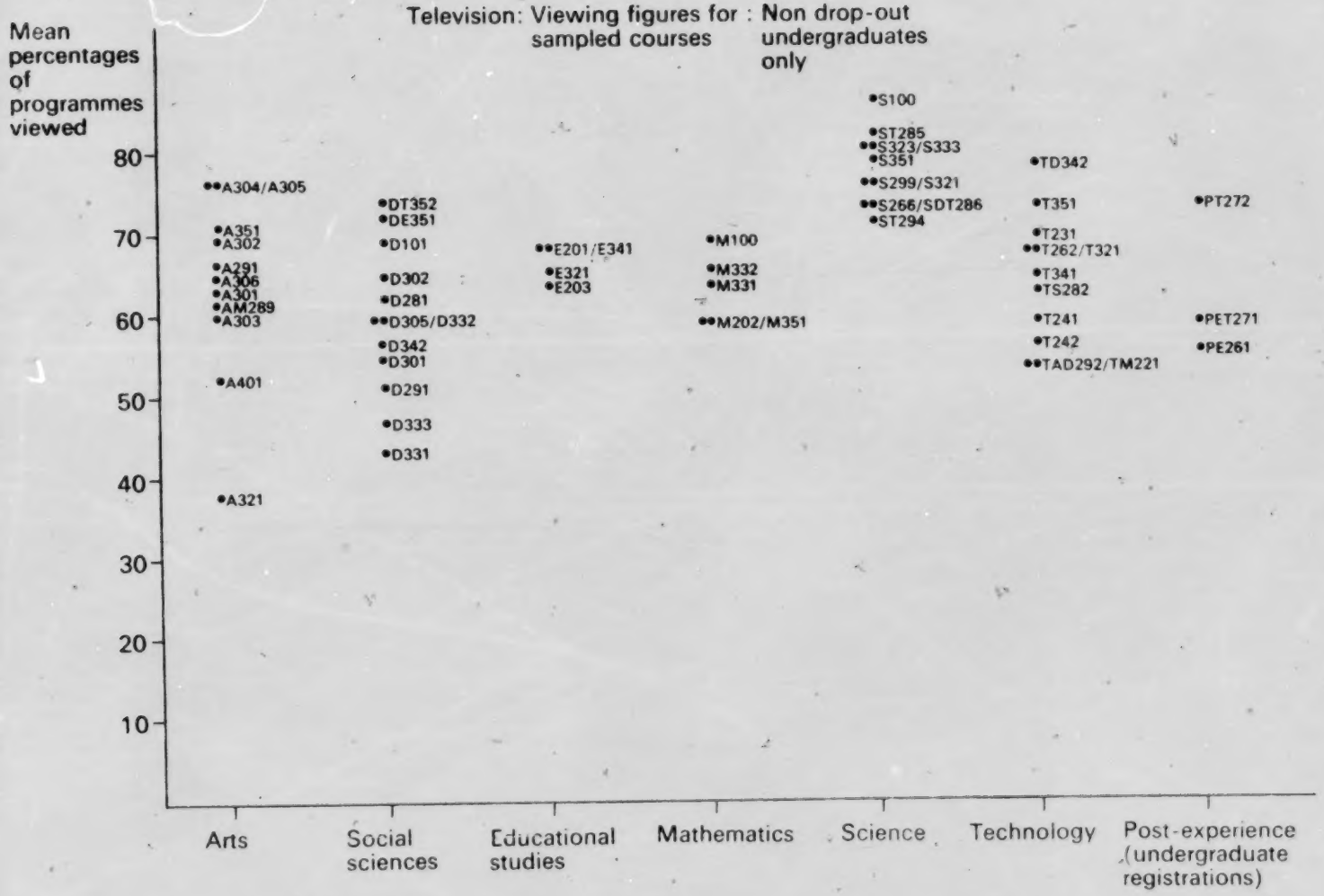
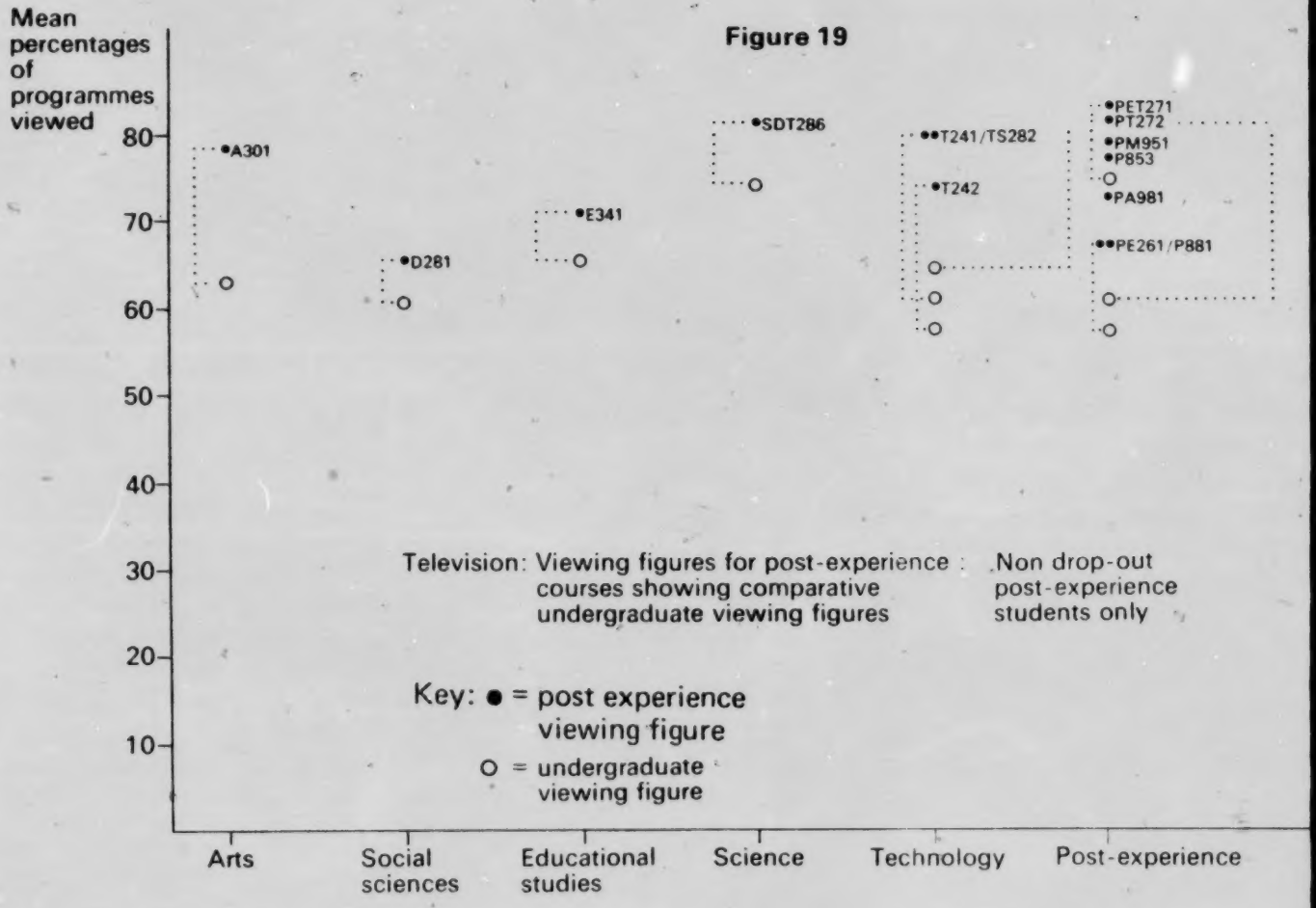


Figure 19


Mean percentages of programmes viewed
80
70
60
50
40
30
20
10
•A301
•D281
•E341
•SDT286
••T241/TS282
•T242
•PET271
•PT272
•PM951
•P853
•PA981
••PE261/P881
Arts
Social sciences
Educational studies
Science
Technology
Post-experience
Television: Viewing figures for post-experience courses showing comparative undergraduate viewing figures
Non drop-out post-experience students only
Key: ● = post experience viewing figure
○ = undergraduate viewing figure

A321, D331, M331, S351, T341 - did not improve its viewing figure relative to those of other courses in the Faculty. As comparison of Figures 20 and 21 (pp. 73 and 74) showing non drop-out listening figures, with Figures 7 and 8 (pp. 32 and 33) illustrates, the effect of excluding drop-outs is much the same for the pattern of radio usage, although in general - even for individual courses - the differences are rather smaller than is the case for television. In fact, the relationship between drop-out and viewing and listening is not at all straightforward. Just because a course has a high drop-out between final registration and end-of-course examination, it does not follow that the use of broadcasting on that course is decreased simply because of, or in proportion to, the high numbers of students dropping out. For one thing, the average number of programmes seen or heard by drop-outs and by students who completed the course was not in all cases, very different (the figures for each course are given in Appendix XII). For example, on M202 and on ST294 non drop-outs listened on average to only 4% more radio programmes than drop-outs; on D301 only 11% more television programmes, on average, were seen by non-drop-outs than by drop-outs. At the other extreme, drop-outs on ST285 saw 42% less programmes on average than students who completed the course; and on A304 drop-outs heard 33% fewer radio programmes than non-drop-outs. These differences are not always easy to explain. In some cases, clearly, the difference is small because non drop-out viewing or listening is particularly low; in other cases, it seems that drop-outs must have continued to watch or listen even after having withdrawn from the course.

A further factor is the time of drop-out: on courses where there was relatively high drop-out early in the year the difference between drop-out and non drop-out viewing/listening will be greater than on courses where the percentage dropping out increases steadily through the year. Data showing the relationship between time of drop-out and viewing and listening are summarised in Appendix XIII. Naturally, in general, the earlier students dropped out, the fewer programmes they saw or heard. However, there is a small proportion (about 5%) who dropped out in the first couple of months who nevertheless saw over three-quarters of the programmes. Moreover, it is notable that students who dropped out even as late as October saw and - particularly - heard markedly fewer programmes on average than students who went on to take the examination: for instance, 29% of such students heard no radio programmes, compared with 16% of students taking the examination who heard none. The fact is that, although drop-out can of course be seen to have some effect on viewing and listening, the inter-relationship of the two factors is extremely difficult to unravel. What is clear, however, is that courses with high drop-out rates do not because of that factor alone, exhibit below-average use of broadcasting when the responses of all finally registered students are used as a basis for the calculation of viewing and listening figures. Indeed, the exclusion of drop-outs increased the average viewing figures by more than 10% on only three of the courses in our sample, while on only one course (E341) were listening figures increased by more than 10%. As before, we find that a more important factor in determining the overall level of viewing and listening is the perceived helpfulness of the programmes among students who went on to complete the course.

Nevertheless, it is true that certain groups of student view and listen more than others. As Table 23 (page 75) shows, not only did students who dropped out of the courses in our sample watch significantly fewer programmes than average: so too did students who took, but failed the

Figure 20

Radio: Listening figures for sampled courses : Non drop-out undergraduates only

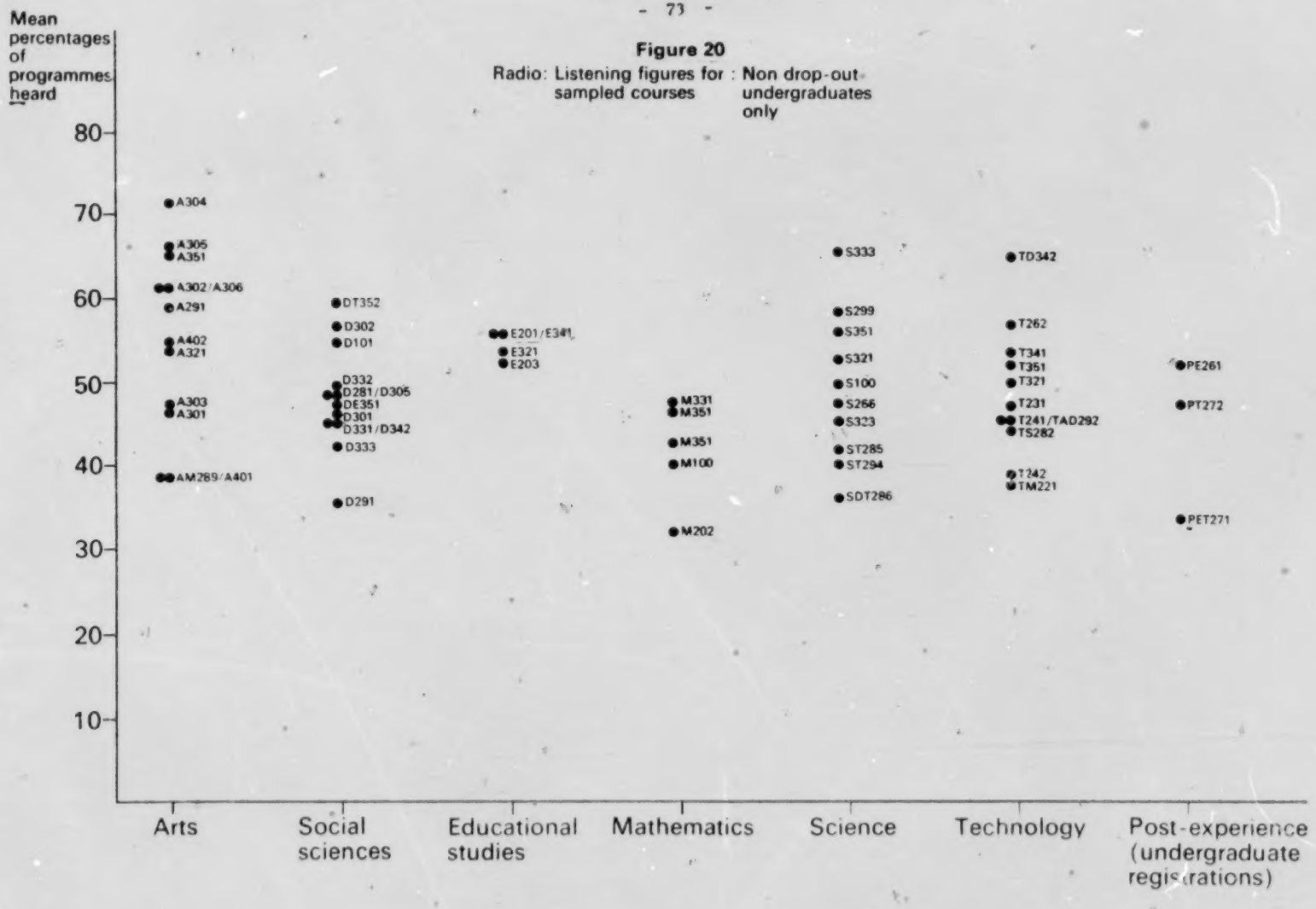
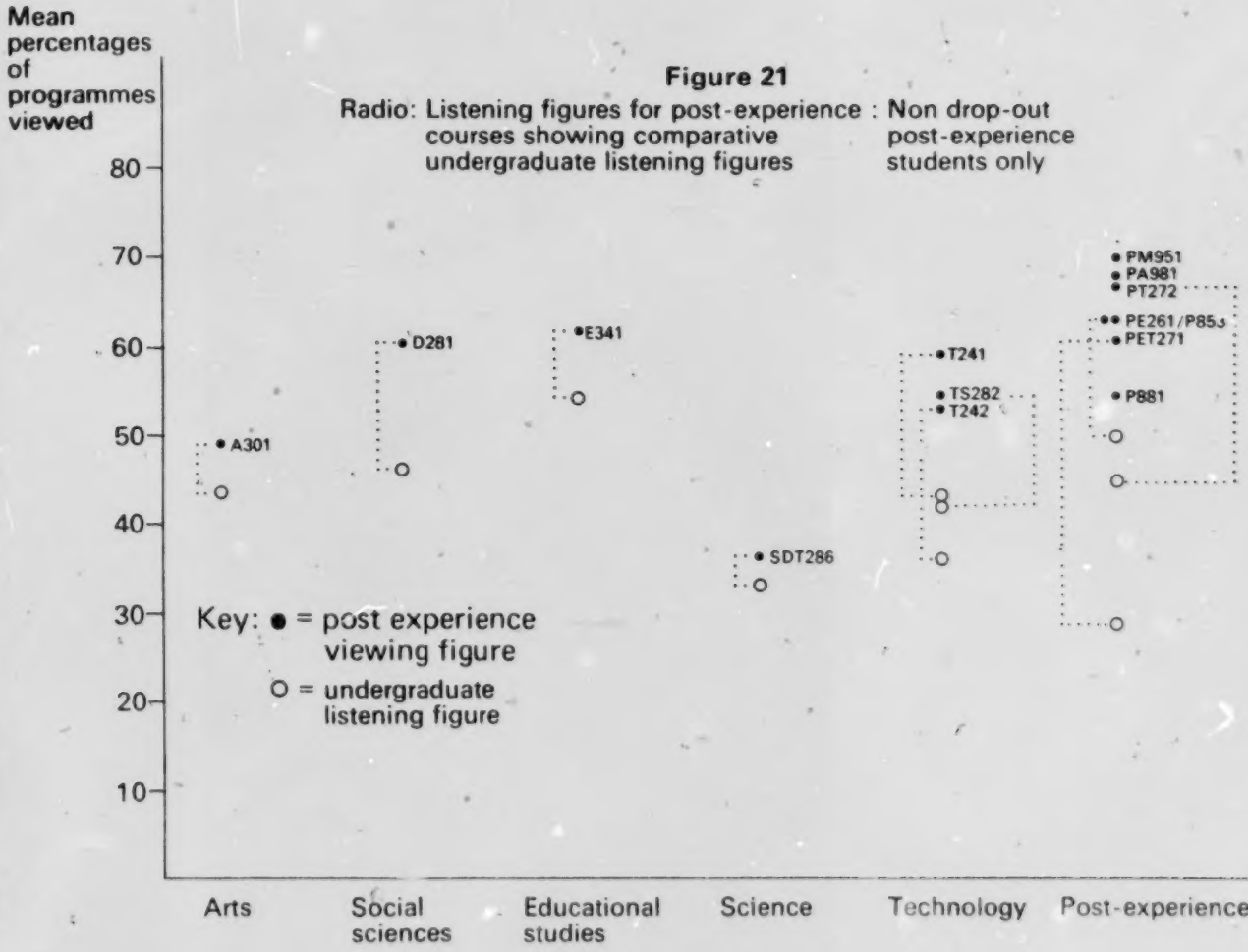


Figure 21

Radio: Listening figures for post-experience courses showing comparative undergraduate listening figures : Non drop-out post-experience students only



final examination.

TABLE 23. Average Viewing Figures: by Faculty and Course Result

% of students watching

	Grade A or B	Grade C or D	Failed	Dropped Out	All
Arts	67	67	54	41	62
Social Sciences	63	68	53	38	63
Educational Studies	70	63	44	36	60
Mathematics	63	68	51	42	58
Science	84	82	57	48	78
Technology	66	66	49	39	59
P-E (undergrad. registrations)	64	61	43	36	55

The percentage of programmes seen by students who failed the examination was particularly low in Educational Studies, and it is noticeable that in this Faculty more than any other it was the "better" students (those gaining Grade A or B) who watched most. Indeed, in the other faculties, there was virtually no difference in viewing levels between "better" or "weaker" students gaining an examination pass (the differences in Social Sciences and Mathematics are actually due to the influence of Foundation course results in these two faculties). Table 24 (page 76) shows a similar listening pattern across the various groups. The same difference between "better" and "weaker" students is apparent in the listening level of Educational Studies students, and there is a slight tendency for the more able Mathematics and Science students to listen more. Overall, though, the listening figures are not high for any group: in Mathematics, Science and Technology, for example, students who completed the course but failed the exam heard very few more programmes than students who dropped out.

These data support the consistent findings of our evaluation studies of individual programmes that students who do not watch and, even more particularly, listen to programmes even quite early in the year are more likely to fail or withdraw from the course than students who do use the programmes. It appears that students who are struggling in a course tend to stop watching and listening in order to concentrate on work on the correspondence texts. However, they are more likely to make an effort to watch and listen if the programmes are perceived as particularly helpful. Thus, Arts students who failed heard only 10% fewer radio programmes than others who completed Arts courses, and students who failed in the Science Faculty still managed to see an average 57% of the television programmes. Of students who did watch and listen, though, there was in general little overall difference between the various ability groups in the extent to which they rated the helpfulness of the programmes. Table 25 (page 76) summarises the television data. In most cases, there is little difference within each faculty in the ratings given by the various groups. (There are, however, some differences within individual courses, and the data for each course are presented in Appendix XIV). However, two faculties do depart somewhat from the general pattern: in both Mathematics and Educational Studies it was the weaker students who found the programmes more helpful. In Mathematics, this may be due to a policy on some courses of using television to amplify difficult aspects of the

TABLE 24. Average Listening Figures: by Faculty and Course Result

% of students listening

	Grade A or B	Grade C or D	Failed	Dropped Out	All
Arts	57	57	46	32	53
Social Sciences	54	52	34	25	49
Educational Studies	61	51	33	22	48
Mathematics	44	38	27	20	36
Science	56	48	36	28	47
Technology	47	47	30	24	41
P-E (undergrad. registrations)	52	45	30	27	42

TABLE 25. Percentages of Students Making Any Use of Television Rating the Programmes Very Helpful: by Faculty and Course Result

% of students rating very helpful

	Grade A or B	Grade C or D	Failed*/Dropped Out*	All
Arts	38	35	39	36
Social Sciences	23	28	27	26
Educational Studies	17	29	30	25
Mathematics	24	42	34	34
Science	46	50	50	50
Technology	30	31	32	31

*Categories combined because of small absolute numbers in 'failed' category

texts or to solve problems. In Educational Studies it is more difficult to explain, particularly since the weaker students in this Faculty tended to watch fewer than average programmes (Table 24). Possible, and tentative, explanations might be that the more able students watch because they have more time, rather than because they find the programmes particularly helpful, (television in Educational Studies, as in Social Sciences, having a rather lower overall rating than programmes in other faculties); or that there is some other feature of Educational Studies courses - perhaps over-loading in the written material - which makes it more difficult for weaker students to watch as often as they would wish: this might account for the somewhat higher helpfulness rating among those weaker students who do watch. In fact, some support for such an explanation comes from the fact that 28% of students in Educational Studies gave the reason "too much other OU work" as a reason for missing television programmes, compared with 20% across all students. However, it is difficult to know whether the choice of such an option actually reflects a situation of pressure on the student, or a rather relaxed attitude to the programmes which may perhaps be felt to be less important than other work.

As Table 26 (page 77) shows, the pattern for radio was very similar to that found for television. Again, there are no striking differences between groups except perhaps in Educational Studies and Mathematics where, as before, the weaker students tended to rate the programmes more highly.

Other Student-Related Factors

Students in their first year of study in 1976 watched, as one might have expected, rather more television programmes than those who had been in the system for longer: 71% of programmes, on average, compared to 59% among 1972 entrants. (Students who registered in 1971 deviated from the

TABLE 26. Percentages of Students Making Any Use of Radio Rating the Programmes Very Helpful: by Faculty and Course Result

% of students rating very helpful

	Grade A or B	Grade C or D	Failed/Dropped Out	All
Arts	37	33	33	34
Social Sciences	18	19	21	20
Educational Studies	18	20	28	21
Mathematics	13	25	20	20
Science	18	13	14	14
Technology	12	13	16	13

trend towards lower viewing among more experienced students: they saw 64% of programmes, on average, which was in line with the overall average number of programmes seen.) In the case of radio, however, new students were no more likely to listen than "older" students. This must be somewhat worrying, since it suggests that the Foundation course programmes are so immediately perceived as being unhelpful that students stop listening very early in the year, or that somehow word travels fast that radio is generally unimportant or a waste of time.

There was a relationship between the number of courses for which a student was registered in 1976 and the average number of programmes seen and heard. Students registered for only one course saw an average of 66% of television programmes, compared with 58% on average among students registered for three or four courses. For radio, the average figures were 48% and 38% respectively, suggesting that in situations of pressure it is radio which suffers rather more than television. Of course, as well as the heavy work-load involved in studying three or four courses simultaneously, there is the problem of coping with broadcast schedules and transmission times: this can become surprisingly complicated once a student is taking more than one or two courses.

It has already been mentioned that students with access to video tape-recorders saw about 12% more programmes, on average, than others. The same was true of students who had access to audio tape-recorders: they heard just over 50% of the programmes, on average, compared with an average listening figure of about 40% among other students.

It is not surprising to find that students who rated the programmes most helpful, watched and listened to the most programmes. Across all courses in the sample 29% of students rated the television component as very helpful: these students saw 81% of the programmes, on average. But it is worth noting that those students (2% of the total) who said the programmes were not at all helpful still saw a third of them. Only 6% of all students saw no programmes. On the other hand, although students who rated the radio programmes as very helpful (15% of the total) heard about the same percentage as those rating television very helpful, those who said that the programmes were not at all helpful heard only a quarter of them. This indicates that students are less likely to listen to radio programmes which they do not find helpful than they are to watch such television programmes. Altogether, 19% of students heard no radio broadcasts at all. However, these students nevertheless saw an average of 36% of the television programmes: on the other hand the 6% who saw no television programmes heard only 7% of the radio programmes, on average. Roughly the same number of students (about 5%) neither saw nor heard a single programme in 1976 as saw and heard all programmes.

These overall viewing and listening figures are remarkably similar to those found in 1974: in general, student patterns of viewing and listening and their broad response to the broadcast element in Open University courses have remained constant in the past two years.

5. SUMMARY AND CONCLUSIONS

What answers have emerged to the questions which prompted the collection of the data for this study?

Access to Audio-visual Equipment

1. 97% of students have regular and easy access to BBC2 television sets and 94% to VHF radio sets (p.12).
2. 54% have access to colour television (p.12).
3. 77% have access to audio tape recorders of some kind; 62% had their own cassette recorders and another 7% had access to OU cassette recorders; students with tape recorders listened to about 10% more radio programmes, on average, than students without; an average of 7% of all radio programmes in 1976 was listened to only on a recording of some kind (p.13).
4. Only 12% of students had access to any sort of video recorder in 1976; only 5% had access to video equipment which did not belong to the OU; students with access to video cartridge machines watched about 10% more television programmes, on average, than students without (p.13).
5. 91% have record-players (p.14).
6. 47% have 35 mm slide-viewers (p.14).
7. 88% have regular and easy access to telephones which could be used for study purposes (p.14).

Open Forum Programmes

8. In 1976, 53% of undergraduates and 58% of post-experience students saw no Open Forum television programmes; 71% of new undergraduates (i.e. 1976 entrants) watched at least some of the programmes, though even of these, the majority watched only a couple, while only 6% of 1976 entrants watched more than half of the Open Forum broadcasts (p.15).
9. The programmes with the biggest audiences were all related closely to aspects of successful course completion, giving guidance on assignments, summer schools and exams (p.18).
10. The main reasons given for not watching the Open Forum programmes were that students had too many other demands on their time, that the subject matter was not of interest and that not enough was known about their content in advance (pp. 18 and 19).
11. 63% of undergraduates and 68% of post-experience students heard no Open Forum radio programmes in 1976; 50% of 1976 entrants heard no programmes; the mean number of programmes heard by all undergraduates was 3 out of a possible 40 (pp. 20 and 21).
12. About an eighth of students said they did not watch the television programmes because previous programmes had been disappointing, and about a sixth said they thought the radio programmes were probably a waste of time: almost half said that although they personally never or rarely listened to the radio programmes, they thought they were probably useful to others (p.22).
13. The overall proportion of students making no use of Open Forum television and radio is increasing; this is due to the growing proportion of experienced students in the system; the actual number of students making any use of Open Forum television and radio has remained fairly constant since 1974 (pp. 15-20).

Viewing and Listening on Individual Courses

14. Over the year as a whole, undergraduate students watched about two-thirds of the television programmes and listened to just under half the radio programmes, on average (pp. 23-26).

15. Most undergraduate students watched most of the television programmes: only 6% saw none and 14% saw all; but roughly equal proportions - about a third in each case - listened only rarely, listened occasionally or listened frequently to the radio programmes: about a fifth heard none at all, while a tenth heard them all (p.23).

16. Post-experience students tended to watch rather more television programmes than undergraduates, though the general pattern of viewing behaviour was very similar between the two groups (pp.23-25).

17. The listening behaviour of post-experience students, however, was quite different from that of undergraduates. Post-experience students listened to about 10% more programmes, on average; about half the students listened to about half the programmes and groups of about a quarter each listened to few and most of the radio programmes (pp.25-28).

18. There were large differences between courses in different faculties in the numbers of programmes seen and heard by students. Television programmes on Science courses had average viewing figures of almost 80%, compared with about 60% for courses in other faculties. Radio programmes on Arts courses had higher than average listening figures and on Maths courses the programmes had below average listening (pp.28-31).

19. There were also wide variations between faculties in the spread of viewing and listening behaviour. The greatest spread, for both television and radio, was in the Arts faculty, which had some of the highest as well as some of the lowest viewing and listening figures (pp.28-34).

20. There was a consistent difference of about 10% between the average number of television programmes seen by undergraduates and post-experience students across all courses available in 1976 to both groups; most courses also had increases of about 10% in post-experience listening figures compared with those of undergraduates (pp.30-33).

21. In general, courses with high (or low) viewing figures also had high (or low) listening figures, although there were some notable exceptions (p.31).

22. New courses did not necessarily have higher viewing or listening figures than older courses: in every faculty except Mathematics there was at least one new course with lower viewing and listening than courses in presentation in 1974 (pp.31 and 34).

Student Rating of Course Components

23. Students perceived the various course components primarily in terms of their helpfulness in the strict learning process. While some components were rated as less helpful than others, they were still rated as being as helpful as they were "interesting" or "motivating" in a broader sense (p.36).

24. The correspondence texts were by far the most highly rated component in every faculty, with more than three-quarters of students finding them very helpful. The only other aspects of the courses to come anywhere near this sort of rating were set books and summer schools which - overall - about half the students rated very helpful, although there

were substantial inter-course differences here (pp.37-39).

25. Television was on a par with set books and summer schools in the Science Faculty. Elsewhere it was found very helpful by not more than a third, with only about a fifth of students in Social Sciences and Educational Studies finding it very helpful (pp.37-39).

26. Although a quarter of Arts students rated the radio component highly, in all other faculties this was generally the least highly rated of all components (pp.37-39).

27. Overall, about a quarter of students found the broadcast notes very helpful, though this rose to a third in Science. In Social Sciences, Educational Studies and Mathematics the notes were rated rather more highly than the programmes themselves (pp.37-39).

28. Correspondence tutoring and class tutorials were rated very helpful by about a third of all students, though a third did not use class tutorials. Both of these components received above average ratings in Arts and also in Mathematics; on the other hand, they were found very helpful by only a quarter of Technology students, while class tutorials also received below average ratings in Social Sciences and Educational Studies (pp.37-39).

29. Ratings of specific components were very similar among undergraduate and post-experience students even for television and radio although post-experience students made considerably more use - in terms of viewing and listening - of the broadcasts (pp.37-39).

30. When the calculation of ratings is based only on those students who made any use of the various components, television and radio are out-rated by most other components in every faculty except Science: here television is still rated more highly than all but the correspondence texts and summer school (pp.40-41).

31. When "non-users" are excluded, there is a relatively big increase in the rating of television and radio in Mathematics. The increase is more marked for television, which is now rated more highly only in Science and Arts (pp.40-41).

32. The three remade courses in the sample - E201, E203 and D101 - were rated very similarly in most respects to their predecessors in 1974; television was found rather more helpful in E203 than it had been in E283, though in D101 it was rated very helpful by about 10% fewer students than in D100 (pp.41-42).

33. Home experiment kits were, with a few exceptions, rather poorly rated by both Science and Technology students, about a tenth of students in each faculty making no use at all of the kits; overall, about a fifth in Science and a third in Technology found them very helpful (pp.41-42).

34. There were at times substantial differences between viewing and listening figures and student rating of the programmes (pp.44-47).

The Need for Repeats

35. Overall, just over a quarter of students thought in 1976 that repeat television broadcasts were necessary, just under a quarter thought they were not necessary, and about a half thought it would be desirable, or a good idea, to have the programmes repeated (pp.51-52).

36. For radio, about a sixth thought repeats were necessary, a third thought they were not and just over two-fifths said they would be desirable (pp.51-52).

37. Students' estimates of the need for repeat transmission were related to their perceptions of the helpfulness of the programmes and to existing transmission arrangements for those programmes (pp.51-58).

38. When repeat broadcasts had already been lost or when transmission times were particularly poor, this had the effect of increasing student assessment of the need for repeats even on relatively low ranking courses; the reverse was also true (pp.54-58).

Factors Affecting Use of Broadcasting

39. The average number of programmes heard on courses which had lost radio repeats since 1974 had decreased by about 6% overall; the number of programmes heard only on transmission fell by 10% across all courses, the overall decline being off-set by an increase in the number of programmes heard only on a recording of some kind (pp.59-61).

40. It was generally the courses with highest listening figures in 1974 which in 1976 had the biggest decreases in programmes heard on transmission and also the biggest increases in programmes heard on recording only (pp.59-61).

41. In no case were more than half the programmes heard on transmission, and on no course did more than half the students, on average, listen to any single transmission (p.59).

42. While the percentage of students giving the lack of repeat transmissions as a reason for missing programmes was 16% across all courses without repeats, this did increase considerably on courses where programmes were found particularly helpful, reaching 40% on A304 (p.59).

43. The pattern of "staggered" television repeats on M100 had no effect on viewing behaviour between 1974 and 1976; however, there was evidence that the policy had the effect of increasing the usefulness of television to weaker students on the course (pp.61-62).

44. As in 1974, no particular combination of transmission times appeared to significantly depress overall viewing and listening figures on any course; as long as there were repeats any individual time appeared to be as good as any other (pp.62-66).

45. There were no significant differences in viewing figures between the various "poor" transmission slots, whether early morning or very early evening (pp.63-65).

46. Courses showing identical transmission times had widely different viewing figures (p.63).

47. Overall, on no course did more than two-thirds of students, on average, watch any single transmission. In general, not more than an eighth watched both transmissions though this increased to a fifth, on average, for Science courses; there was a clear positive relationship between high helpfulness ratings and above average percentages watching twice (p.63).

48. For radio, although overall listening figures were unaffected, the very early morning slots (06.00 and 06.20) were markedly less used than those between 06.40 and 08.00 (pp.63 and 65).

49. In general, not more than about a third of students, on average, listened to any single transmission, though this rose to nearly a half on specific courses. The percentage of students listening to both transmissions never reached more than 8%, though an average of 20% recorded the programmes and this rose to about a third on courses where radio was found most helpful (p.63).

50. About an eighth of students overall said that they did not listen because they found radio a difficult medium to use in studying. Almost a fifth of Maths students reported this difficulty (p.66).

51. Although only 6% of students overall said that they had not listened to programmes because radio on previously studied courses had not been worth listening to, this reason was given by 10% of Science students and by 12% of Mathematics and Technology students (p.66).

52. A quarter of Science and Technology students and a third of Mathematics students made no use of radio; it seems likely that a sizeable proportion of the potential radio audience in these areas is irretrievable (pp.66-67).

53. Although broadcasts directly linked to assessment generally had above average ratings and viewing/listening figures, this was not always so; assessment of broadcast material did not result in anything like 100% use of the programmes; certain courses whose programmes were not assessed had very similar viewing/listening figures and helpfulness ratings as courses whose programmes were assessed (p.67).

54. It seems clear that the main thing which will induce students to watch and listen is an obvious and direct relevance of the broadcasts to the other course material and to the general course themes and aims (p.67).

55. When students who dropped out before the final examination are excluded from the sample, overall viewing and listening figures increase by about 5%, although the relative positions of the different faculties remain much the same. However, within faculties, the relative positions of individual courses do alter depending on drop-out rate (pp.67-74).

56. Use of broadcasting on individual courses is not decreased in simple proportion to the drop-out rate. The average number of programmes seen or heard by drop-outs and by students who completed the course was not very different: in some cases, the difference is small because non drop-out viewing or listening is particularly low; in others, drop-outs have continued to watch or listen after withdrawal from the course (p.72).

57. Students who took, but failed, the final examination watched and listened to significantly fewer programmes than average. In Educational Studies, the more successful students - in terms of examination result - tended to watch and listen more than average; there was a slight tendency for more able students in Mathematics and Science to listen more (pp.72 and 75).

58. There was in general little overall difference between the various ability groups in the extent to which they rated the helpfulness of the programmes, except in Educational Studies and Mathematics where the weaker students found the television - and to a lesser extent the radio - programmes more helpful (pp.75-76).

59. Students in their first year of study watched more television programmes than those who had been in the system for longer. This was not so in the case of radio, however (pp.76-77).

60. Overall viewing and listening figures in 1976 were remarkably similar to those found in 1974: in general, student patterns of viewing and listening and their broad response to the broadcast element in Open University courses have remained constant in the past two years (pp.77-78).

The Lean Years

One of the main conclusions to the Bates Report was that, having enjoyed "five fat years of broadcasting", the University was about to enter a "lean" period from 1976 - a period in which the scarcity of transmission time would pose major problems for students and the University in using broadcasting successfully. The then unforeseen agreement with the BBC which subsequently made available five extra transmission hours weekly on the BBC1 network had the effect of easing the situation for television to some extent in 1976, so that it was still possible to provide repeat broadcasts of television programmes for all but one of the University's courses in that year. On the radio side, such an arrangement was not possible and here the effects of the withdrawal of repeat transmissions did indeed begin to make themselves felt, even though many of the courses allocated no repeats in 1976 were selected because they were known to have attracted well below average numbers of listeners in earlier years.

The proportion of programmes heard on transmission fell by up to 20% on courses where radio had been found particularly helpful, and by 10% across all courses without repeats. Although the potential overall decline in radio listening could be off-set, at least in a limited way, by the possibility - for those students with access to tape-recorders - of automatic recording of programmes, the average number of non-repeated programmes heard at all still decreased by about 6%. Moreover, the percentage of students citing the lack of repeat transmissions as a reason for missing programmes reached 40%, again when the radio component had been found particularly helpful.

Clearly, these results have important implications. As the proportion of courses without repeats increases - and by 1978 almost half will have none - so must an increasing proportion of courses whose programmes students find relatively helpful be left with only single transmissions. Consequently, more and more students will be disadvantaged and the already rather gloomy picture regarding use of radio will deteriorate even further as those courses which now have relatively high listening figures inevitably lose more of their listeners. It would almost certainly be foolhardy to imagine that, faced with no option but single transmissions, the proportion of students using them will increase dramatically, particularly if the programmes are important enough: the one course available in 1976 with single transmission slots for programmes which were directly assessed still drew less than half of the potential audience. In 1974 it was found that in no case did more than 48% of students use any single radio transmission slot: this was still the case in 1976. In both 1974 and 1976 no more than 65% of students, on average, used any single television transmission slot, their is no reason to suppose that this will change. Indeed there is now considerable evidence to show that this is the practical maximum audience for any individual transmission slot: apart from the 20% of students who will regularly find any single slot impossible, our individual evaluation studies have shown a fairly consistent minimum of 15% who miss particular programmes unavoidably because of unforeseen but transitory circumstances.

While the problem of single transmissions is alleviated in the case of radio by the facility of automatic recording open to many students and, more importantly, since 1977 by the audio library service which makes it possible for any programme missed on transmission to be heard on cassettes, these alternatives do not exist in the case of television. The proportion of students with access to video equipment is negligible. The University has still found it impossible to

implement a back-up service for the replay of television programmes in study centres even though the provision of such a system would actually increase the cost-effectiveness of the total expenditure on television, even though 95% of the students in our sample said that they would attend at study centres to watch recordings of the programmes if this were the only means of seeing them, and though non-repeated radio programmes have been five times more heavily requested through the audio library service as programmes which did have repeats. It is crucial to the future viability of television as a component of the University's teaching system that current discussions with the D.E.S. to begin the phased introduction of such a scheme from 1979 should be brought to a swift and successful conclusion. If the University expects students to take seriously programmes broadcast at times - for example, in the early morning, at family mealtimes, etc. - when it is, practically, extremely difficult to approach them with real intellectual effort, a commitment is surely needed to the provision of this material in a form which actually makes it possible for students to treat it in a serious way.

It seems quite unrealistic in this context to rely on, or even to discuss in any detail, the "ifs" and "buts" of the Annan proposals for the fourth channel given that, even on the most optimistic estimates, this could not be available before 1982, that the economics of the situation mean that it would be many more years before complete national coverage could be achieved, that the Open University would be in fierce competition for air-time on the channel, and that the Conservative Party has already rejected the Annan Report: given the expected outcome of the next general election, it is unlikely that these proposals will actually be adopted in any form. The solution to the University's transmission problem must certainly be found by a reorganisation and reformulation of policy internal to the University itself. Various strategies - such as, for example, the production of a number of low-resource, non-broadcast, courses which would allow the provision of repeats to a higher proportion of those courses which do have broadcasts; the provision of low-cost audio-visual alternatives to direct transmission on certain courses - have been discussed in detail elsewhere[1]. The findings of this study, however, underline the necessity of full and serious examination of the arguments behind these various proposals and of their implications; the alternative would be to allow the now imminent lean years to reduce the use of broadcasting to a skeleton of its potential contribution to the University's teaching system.

Radio: A Suitable Case for Treatment?

One of the most disappointing aspects of the study's findings was the continued low use made of radio by students in all faculties except Arts. Even though several of the new courses, particularly those using radiovision, found above-average audiences for radio, the overall use of radio had not increased since 1974: indeed about a fifth of undergraduates overall heard no programmes at all in 1976 and this rose to a quarter of Science and Technology students and to a third of Mathematics students making no use at all of radio. High proportions of students who did not listen to any programmes were not a feature simply of the older courses in the sample: on certain new courses in Maths, Science and Technology, the percentage making no use of radio approached 40%.

There certainly did seem to be something of an "inheritance" factor in these small audiences for radio with at least a tenth of students in Maths, Science and Technology saying explicitly that they had not listened because programmes on courses studied previously had not been worth listening to. It was noticeable, however, that although new students watched

an above average number of television programmes, this was not the case for radio, suggesting either that students make up their minds very quickly indeed about the value of the programmes on the Foundation courses or perhaps that negative reinforcement about the usefulness of radio reaches them - possibly from other students, or from staff - very soon after (or even before) starting their courses. There was also the fact that post-experience students listened to (and also watched) notably more programmes than undergraduates (on one course, there was a difference of 30% in the average number of radio programmes heard) even though post-experience students did not find the programmes any more helpful than undergraduates. Indeed it was clear that although on some courses undergraduates were prepared to watch television programmes which they did not find particularly helpful, this was not the case for radio. All the evidence indicates that, with very few exceptions, students regard radio as the most dispensable course component; a high proportion of students who heard no radio programmes saw at least some television programmes, though the reverse was not true; radio was generally the least highly rated component, across all courses; students who subsequently failed or withdrew from the courses stopped listening to radio earlier than they stopped watching television programmes. On the other hand it is clear that, given a chance, radio can be very useful even on courses where it is dismissed without trial by a high proportion of students: for example, on one third-level Maths course, the same percentage of students (36%) rated both radio and television components as very helpful, but while a third made no use of radio on the course, only a tenth made no use of television.

It is probably this, rather than the overall rather low usage of radio which should give most cause for concern. Radio, after all, is one of the University's least expensive teaching media. It could be argued that its extensive use by only a minority of the student population is not necessarily a cause for concern and that indeed radio might most fruitfully be directed, in some cases at least, specifically at minority groups - perhaps to explore a particular optional topic, or to help weaker students with particular problems. The difficulty at the moment seems to be that some students who could find radio helpful on certain courses have rejected it out of hand, though this is more true of some faculties than of others. It would seem imperative to re-educate both students and tutors into a more receptive attitude to radio by emphasising and clearly labelling, in introductions and guides to courses, the particular policy which has been adopted by the course team in defining a role for radio in the course (that is, where such a policy or role actually exists: the comments made in the Bates Report concerning the somewhat off-hand and "rag-bag" use of radio still apply even to some new courses).

A further problem concerns the difficulty which students have in using radio as a medium for study. Students were six times more likely to report difficulty with radio as with television. This is a complex issue which has not yet been fully investigated, though evidence from our evaluations of individual programmes suggests that, without visual back-up of some sort, students find it difficult to maintain concentration and to find a way back into the programme's argument once concentration has been lost. For this reason, radiovision programmes can be more assimilable by students, though as the findings have shown, the range of programme styles and functions under the "radiovision" umbrella is wide and, particularly with certain sorts of programme - for instance, working through diagrams or problem questions - pacing can be crucial to the students' ability to use the material. Various other strategies

to help students' concentration might be to use the broadcast notes to outline the programmes' structure and aims and to alert students to two or three main points to listen for (rather surprisingly, these simple things are often not done, despite the conclusive evidence - from evaluation studies, and reinforced by this study - of the value of broadcast notes); to pace programmes so that brief notes can be taken while listening; to discourage passive listening by, for instance, asking questions directly of students during the programme, interrupting the "flow" of a discussion or talk by occasional interjections by an academic commentator, using music and other effects.

At a more general policy level, however, the possibility could be considered of advising students to record radio programmes, as a matter of course, so that they can be replayed and stopped at will. Already an average of 20% of programmes across all courses is recorded by students, and the radio component of S101 is being designed on the assumption that students have access to a tape-recorder and will record the programmes. We know that more than three-quarters of all students do, in fact, have access to an audio tape-recorder of some kind, and it is reasonable to assume that this proportion will increase over the next few years. Moreover, as Bates and Kern[1] have shown, for courses with populations of less than 500, it is actually cheaper to send audio cassettes to each student than to transmit the programmes. Given that the proportion of low-population courses will increase between now and 1982 when the University expects to reach the "steady-state", it would be worthwhile for course teams to consider the use of cassettes when such courses are being planned or remade. Clearly, this would have implications for the design of the programmes since cassettes would be less easily up-dated and would lose some of the immediacy and spontaneity of radio necessary to certain programme formats, but would allow for greater information density and more activity-based programmes. Pros and cons would need to be carefully considered by each course team in the context of its audio-visual policy for the course as a whole.

Students and Broadcasting: Allocation Problems

It is beyond the scope of a report based on data such as that on which this study drew to pass detailed evaluation judgements on the way in which broadcasting has been and is used in Open University courses. The factors impinging on the overall viewing and listening picture range through student ability and length of experience in the Open University system, the number of courses being studied, the availability to students of audio-visual recording equipment, experience of broadcasting on courses previously studied, difficulty in learning from specific media, transmission arrangements for the programmes, assessment policy for the course, the relationship of programmes to other course components and perceived helpfulness of the programmes. Certainly, many of these factors appear to have only a marginal impact on the general pattern. Throughout the study, the over-riding factor influencing viewing and listening has appeared to be the extent to which students perceive the programmes as helpful in assisting their study of the course (even this was by no means always so, since particularly in Arts high proportions of students watched television programmes which they did not rate as very helpful in this sense). This would indicate that certain assumptions already held about the instrumentalism of students are correct: that the majority will discard or undervalue those aspects which do not make a direct contribution to assignment and examination completion. However, the data actually do not support such a narrow interpretation of students' perceptions of the helpfulness of broadcasts. Clearly, since many courses with no CMA or TMA questions relating directly

to the programmes had viewing and listening figures - as well as helpfulness ratings - equal to, or even greater than, courses whose programmes were assessed, students do not simply scan assignment questions for references to broadcast material in order to decide whether to watch or listen. Rather, "helpfulness" does seem to be experienced in a broader way as being able to make some - to students - recognisable contribution to those aspects of the course which students understand to be important.

Here, however, is where at least one important problem emerges. It is not always possible to decide, on the basis of general survey data, why students have apparently given little weight to an aspect of the course which the course team has deemed important. Take, as an example, two second level Technology courses, T262 "Man-Made Futures" and TM221 "The Digital Computer". On each course, the radio programmes were used in a roughly similar - tutorial-type - way: on T262 to provide comment and advice on the unit material and on the selection, design and preparation of a project assignment; on TM221 to suggest alternative approaches to selected topics from the week's work and to give guidance on assignment and examination questions. Yet while T262 had the second-highest listening figure in Technology, TM221 had the lowest: students on TM221 were twice as likely to listen to no programmes as students on T262. Although, among students who did listen, the disparity in the helpfulness rating was not so large, T262 was still judged to be more helpful by students. Without looking in considerable detail at the course as a whole and at the specific content of the programmes it would be impossible to begin to know whether, for instance, the TM221 team's judgement had somehow been at fault in selecting this particular role for radio, whether the programme production on TM221 was in some way inferior to that on T262 or whether particular student characteristics had in some respects influenced the different listening figures for the two courses. Yet, using generally accepted allocation criteria TM221 would almost certainly lose its repeat transmissions, while T262 would not. This seems fine for T262 since the programmes on that course had relatively high listening figures and were rated rather more highly than those on TM221. What about TM221, though?

The choice - in withdrawal of repeats - would probably not actually be between TM221 and T262, but between TM221 and some other course which achieved perhaps yet slightly higher listening and ratings. It could be argued that, given the relative success of this particular use of radio on T262, repeats on TM221 should not be sacrificed, but that effort should be made to strengthen other aspects of the course - for example, course guide, broadcast notes - so that these programmes can be helped to achieve the listening figures and ratings accorded to those on T262. However, these arguments can only be made, and their validity or practicality can only be evaluated, in the light of detailed knowledge of the courses concerned, in other words within the Faculty itself.

Because of the difficulty of making these fine-line decisions, it would seem preferable for the Broadcast Sub-committee, on the basis of data such as that presented in this report, to make a broad time-band allocation to each Faculty and to allow individual Faculties to decide on the details of which courses should or should not have repeats, and which particular transmission slots should be given to which programmes. Indeed, it is arguable that such a method of allocation should also be used in making the initial programme allocations to new courses bidding for resources. In this way, Faculties would have more control over the distribution of broadcast resources between and within their own courses.

Much larger allocations than are possible under the present system could be made to specific courses where there is seen to be a clear need, while others might have very few or no programmes at all. At present, it seems that political factors at times force all course teams to bid for programmes for fear that the Faculty may somehow lose out. If the Faculty itself, however, was making the allocations within broad limits laid down by a central co-ordinating committee, a rather more flexible and almost certainly more fruitful approach could be adopted. If, within each Faculty, the number of broadcasts allotted to any one course reflected more accurately than is possible at present the extent to which radio and television could purposefully and directly contribute to the body of knowledge and experience to be transmitted by that course, many existing problems in our use of broadcasting - for example, the effects on students' viewing and listening of "hang-over" from a poor use of broadcasting to a good use - could be alleviated; in such a situation the real value placed on television and radio could only increase.